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## LABORATORY NOTES.

By Albert B. Prescott.

### I. Scheme for the Valuation of Dover's Powder, with Analysis of Six Samples.

The samples were purchased in Ann Arbor, Massillon, O., and Dalton, O. The process was as follows: The powders were made alkaline and agitated with several portions of benzole. The emetia and narcotina are dissolved, the morphia is not dissolved (more than a *trace*), from alkaline solutions by benzole.[1] The benzole solution was concentrated, and the alkaloids extracted with acidulated (sulphuric acid) water; this solution was made slightly alkaline with ammonia, and agitated with several portions of petroleum naphtha (sp. gr. ·725). Petroleum naphtha dissolves emetia and *only a trace* of narcotina.[2] The petroleum naphtha was concentrated, and treated with acidulated (sulphuric acid) water. The acidulated water solution was treated with Mayer's solution, 1 cc. of which precipitates 0·0189 gram emetia.[3] The alkaline solution, after agitating with petroleum naphtha, was made slightly acid (sulphuric) and titrated with Mayer's solution, 1 cc. precipitating ·0213 gram narcotina.[4] The residue, after treating the powder with benzole, was treated several times with amylic alcohol, filtered and the filtrate evaporated to dryness and weighed as *crude* morphia. This was then redissolved in acidulated (sulphuric) water, filtered and the filtrate titrated with Mayer's solution, 1 cc. precipitating ·020 grams morphia.

The method may be tabulated:

[1] Dragendorff's scheme, in Prescott's "Prox. Org. Anal.," p. 136.
[2] *Ibid.* Also Dragendorff: "Ermittelung von Giften," p. 300.
[3] Dragendorff: "Werthbestimmung starkwirkender Droguen," p. 37.
[4] Dragendorff: "Werthbestim.," etc., p. 87; "Proc. Am. Pharm. Ass," x, p 238.

The dry powder is moistened with ammonia and shaken with several portions benzole.

| RESIDUE, containing *morphia*, indeterminate and inorganic matter, etc. | SOLUTION, containing *emetia*, *narcotina* and perhaps some indeterminate matter. |
|---|---|
| Agitate with several portions amylic alcohol; separate, evaporate the amylic alcoholic solution to dryness, and weigh as *crude morphia*. Dissolve in acidulated water, filter and titrate with Mayer's solution. | Concentrate, agitate with acidulated water; separate the water solution from the benzole by decantation or filtering through a wet filter (the benzole will remain in the filter), concentrate, make slightly alkaline (ammonia) and shake with several portions of petroleum naphtha. |

| ALKALINE SOLUTION. | PETROL. NAPH. SOLUTION. |
|---|---|
| *Narcotina.* | *Emetia.* |
| Make slightly acid and titrate with Mayer's solution. | Agitate with acidulated water; separate, and titrate its acidulated water solution with Mayer's solution. |

In each case three grams were taken. They were all examined for adulterations and found to be pure. The following are the results of Mr. C. W. HEISTER's analysis:

| No. | Crude Morphia. | Mophia determined volumetrically. | Per cent. Morphia (volumetric). | Narcotina. | Per cent. Narcotina. | Emetia. | Per cent. Emetia. |
|---|---|---|---|---|---|---|---|
| 1 | ·0400 | ·0282 | ·94 | ·0107 | ·35 | ·0060 | ·20 |
| 2 | ·0535 | ·0303 | 1·00 | ·0129 | ·43 | ·0057 | ·19 |
| 3 | ·0300 | ·0242 | ·80 | ·0086 | ·28 | ·0095 | ·31 |
| 4 | ·0455 | ·0282 | ·94 | ·0143 | ·47 | ·0081 | 27 |
| 5 | 0·535 | ·0262 | ·87 | ·0107 | ·35 | ·0076 | ·25 |
| 6 | ·0620 | ·0303 | 1·00 | ·0107 | ·35 | ·0085 | ·28 |
| 7 | ·0510 | ·0282 | ·94 | ·0096 | ·32 | ·0057 | ·19 |
| Average pr. ct. | | | ·92 | | ·38 | | ·24 |
| U.S.P. standard | | | 1·00 | | | | [1] |

[1] This represents 2·4 per cent. emetia in the powdered ipecacuanha root.

For an assay of several specimens of Dover's Powders, by a different process, see "Am. Journ. Pharm.," Aug., 1876, p. 359.

## II. An Analysis of Wahoo Bark and an Examination of Euonymin.

In 1862 Mr. Wm. E. Wenzell reported that the root-bark of Euonymus atropurpureus contains a glucoside (which he named euonymin) asparagin, several resins and a fixed oil, besides well-known non-medicinal substances. The so-called euonymin of the eclectic "concentrated remedies" is said to be made, like most of its class, by precipitating a strong tincture of the drug with water, and contains therefore all constituents of the bark which are soluble in alcohol and insoluble in water.

At my suggestion Mr. J. J. MILLER undertook a proximate analysis of wahoo root bark. Mr. Miller readily obtained *euonymin* by Wenzell's proces ("Am. Jour. Pharm.," 1862, p. 387), and obtained additional reactions for it. It was found to be a white, intensely bitter, odorless, uncrystallizable solid, slightly soluble in water (Wenzell says it is insoluble), soluble in alcohol, in petroleum, slightly soluble in ether (hence wasted by the ether washing of Wenzell's process), insoluble in benzole (of coal tar) and in carbon disulphide. In dilute sulphuric acid it dissolves colorless; in the concentrated acid it turns first yellow then red-brown, these colors being intensified by adding a fragment of potassium dichromate. Both nitric and hydrochloric acids dissolve it with yellow color. From its alcoholic solution iodine solution with potassium iodide gives a brownish-red precipitate; potassium mercuric iodide, a white precipitate; sodium phosphomolybdate, a green-yellow precipitate; tannic acid, a slight white precipitate; picric acid, a precipitate only on long standing. The solution of euonymin in dilute sulphuric acid was precipitated green-yellow by sodium phosphomolybdate, the addition of ammonia changing the precipitate to a blue solution which faded on boiling.

The bark of the root was also subjected to a full proximate analysis, following Rochleder's plan in the main. By redistilling several times from sodium chloride solution, then extracting the distillate with benzole and evaporating this solution carefully, a small quantity of a *volatile oil* having the odor of the drug was obtained. This volatile oil was clear, brownish in color, of balsamic taste, neutral in reaction and evapo-

rated very slowly on simple exposure to the air. Mr. Clothier, in 1862, found no volatile oil, which may have been due to the solubility of the oil in water not saturated with sodium chloride. In farther operations, albumen, starch, gum, wax, resins, fixed oil and glucose were found. The details of the processes, here omitted, are given in a fuller report preserved at the university.

What medicinal properties, if any, belong to the volatile oil and the resins we are at present unable to declare. The euonymin of the list of "concentrated remedies" contains both resin and volatile oil. Its virtues, though due chiefly to the glucoside, may be modified by the resins and oil, and diminished by inert material.

### III. A Partial Analysis of the Oxytropis Lamberti, the So-called Crazy Weed of Southern Colorado.

In the spring of 1876 a resident of Rosita, Col., sent some specimens of a weed which he called "crazy weed," and which he said was sometimes called milfoil or yarrow. He wrote that it was poisonous to horses and cattle; that he had lost a number of horses by their acquiring a taste for it. When horses have once tasted of it they will eat nothing else. The symptoms resemble founder and paralysis of the nervous system. The Mexicans of that country sometimes use it in making beer, and its effects upon men seem to be about the same as upon animals.

The examination of the plant was assigned to Miss CATHERINE M. WATSON. It was identified as Oxytropis Lamberti, nat. ord., Leguminosæ.

The fresh root is, externally, of a yellowish-brown color. It is very flexible and tough, and may easily be torn into long fibrous strings. The transverse section shows a thick, whitish bark surrounding a bright yellow woody column. The root has a peculiar and disagreeable odor, and a sweet taste resembling that of green peas. Under the microscope, from the outside toward the centre, the tissues appear as follows:

1. The epidermis, consisting of two rows of tabular weathered, brownish cells.

2. A broad zone of parenchyma, interrupted by wedges of liber fibre, which have their bases toward the axis of the root or against the bases of the

3. Wedges which make up the woody column of the root.

The elongated fibres are partly united into liber bundles and partly formed into a net-work, making a very loose and open structure. Occasionally masses of resin are found occupying three or four absorbed cells. The wood is traversed by numerous medullary rays, which have the same structure as those of the bark. The vessels are grouped together in bundles of from three to five, and branch and anastomose, forming a net-work like that of the liber. The cells of the wood parenchyma, as well as those of the bark, are thin-walled and nearly cubical in shape. Some needle-shaped crystals of calcic oxalate were found in the cells surrounding the liber. Solution of iodine imparts an orange hue to the whole root, proving the absence of starch.

The chemical examination was conducted as follows: The dried and ground root was digested in water, acidulated with sulphuric acid for twenty-four hours, strained through muslin and filtered. The filtrate was nearly neutralized with solution of baric hydrate, and evaporated on the water-bath to the consistency of a thick paste, then treated with hot alcohol and digested for several hours. The solution was decanted, the residue washed with absolute alcohol and the alcohol recovered from the solution by distillation. The residual water solution was diluted with acidulated water, and the acid solution was then washed with ether. The decanted ether gave only a slight residue. The solution was then made alkaline with ammonia and again washed with ether This ethereal solution had a disagreeable odor, a yellow color and a deep blue fluorescence. Allowed to evaporate spontaneously, it left a brownish, waxy residue, which was only sparingly soluble in pure water, but was dissolved readily by water acidulated with sulphuric or oxalic acid. This solution gave precipitates with potassic mercuric iodide, metatungstic acid, phosphomolybdic acid and solution of iodine in iodide of potassium. The precipitate formed by tannic acid was redissolved in an excess of the acid. Strong sulphuric acid gave a bright red color, turned to brown by heating. Phosphomolybdic acid, followed by ammonia, gave a deep blue solution. The solution was found to contain nitrogen upon being tested by Wanklyn and Chapman's method. It was attempted to purify of all non-alkaloidal matter by precipitating the solution with phosphomolybdic acid, washing the precipitate with a small quantity of water, mixing with a quantity of baric carbonate, drying at 100°C., and extracting with boiling alcohol

(Husemann, "Pflanzenstoffe," p. 25). This alcoholic solution, upon evaporation, left a brownish, waxy and bitter residue, which was readily soluble in chloroform and ether. A small portion dissolved in water acidulated with oxalic acid quickly liberated iodine from iodic acid. A test for nitrogen and precipitates with the alkaloid reagents were obtained, as before purification.

Another portion of the root was treated with ether for the resin. The ether, after decantation, was allowed to evaporate spontaneously, and the residue treated with acidulated water. The water solution was bitter, and after standing two or three days deposited a purple-brown powder. The resin was soft, waxy, insoluble in alkalies, benzin, petroleum naphtha, turpentine, carbon disulphide and hydrochloric acid. It was soluble in ether, chloroform and alcohol, in sulphuric acid with a brown color, and in nitric acid with a bright yellow color.

At this point the work was interrupted by lack of material.[1]

In the "Proceedings of the Academy of Natural Sciences," 1877, page 274, some mention is made of this plant; nothing, however, that has not already been mentioned above.

Some physiological experiments were made upon himself by Mr. W. R. BIRDSALL. He used the dried ground root. After taking twenty-grain doses at intervals during several days and experiencing no effect, four forty-grain doses were taken within an hour and a half. Five hours after taking the last dose slight colicky pains were experienced, and a slight smarting of the eyelids was noticed, but no other marked effects. An ounce and a half of fluid extract was given to a kitten two months old. No effect was observed except that it appeared to dislike the taste.

From these experiments it would seem that the dried ground root possesses no poisonous properties.

## IV. An Analysis of the Cranberry (Vaccinium macrocarpum).

As immense quantities of these berries are often rendered useless by being frozen, the inquiry has arisen as to how these could be utilized. Mr. L. W. MOODY made an analysis of the berry, obtaining the following:

[1] The work was resumed at a later period, but only a short time before Miss Watson's death.

| | |
|---|---|
| Pectous substances, etc., | 6·27 per cent. |
| Seeds, skins, etc., | 9·64 |
| Citric acid, | 2 27 |
| Sugar, | 2 23 |
| Water, | 82·23 |
| Sum of special determinations, | 102·64 |

There was found 1·25 per cent. of ash included in the above, mostly in the seeds and skins. The determinations of the pectous substances can only be approximate. No tartaric, malic, oxalic or tannic acid was found to be present.

It was found that good *cranberry jelly* could be made from the berries with less than the usual amount of sugar, by first expressing and rejecting a portion of the juice, so that the jelly should consist more largely of the pectous substances of the fruit. Taking eleven ounces of berries, expressing from four to six ounces of juice, boiling the residue with water, straining through a cloth, concentrating, adding two and a half ounces of sugar, and concentrating till a pellicle formed, there were obtained four ounces of very fine jelly. From this it is apparent that the jelly might be obtained as a by-product in manufacturing citric acid from the berries. Also, as Mr. Moody verified by trial, the residue, after expressing the juice, can be fermented and distilled for alcohol.

From one hundred pounds of berries, two pounds of citric acid and about thirty-three pounds of jelly could be obtained. Or, instead of the jelly, about one pound of absolute alcohol, or its equivalent of weaker alcohol, might be had.

## V. The Purity of Carbonate of Magnesium.

The requirements of our Pharmacopœia are pretty strict for carbonate of magnesium, ordaining the almost absolute exclusion of calcium salts, sulphates and sodium carbonate, as follows: "Wholly dissolved by sulphuric acid, forming a solution which does not precipitate with oxalate of ammonium (a delicate test for calcium). Distilled water, which has been boiled with it, does not change the color of turmeric (sodium carbonate) and yields no precipitate with chloride of barium (sulphates) or nitrate of silver (chlorides, etc.)" As generally manufactured, the three impurities named, calcium salts, sulphates and sodium carbonate, would be of natural occurrence, and their traces would not be "medicinal impurities" in the administration of carbon-

ate of magnesium itself. But in the use of this article as a material for certain preparations, even traces of some of the foreign substances named would become "pharmaceutical impurities." Essential waters made with carbonate of magnesium, containing sulphates and soluble carbonates, become contaminated with these salts, and the alkalinity, due to the presence of sodium carbonate, may prove a very serious incompatibility with salts of the potent alkaloids which are often put up in these solutions.

To furnish some evidence as to the purity of the carbonate of magnesium in use, its examination was assigned to Mr. R. H. WALLACE. The following are his results:

| Carbonate of Magnesium. | No. 1. | No. 2. | No. 3. |
|---|---|---|---|
| Magnesium, as oxide, | 40·31 per cent. | 38 56 per cent. | 42·12 per cent. |
| $CO_2$, of carbonate, | 33·25 | 32·18 | 34·05 |
| Water of hydration, | 22·67 | 22.30 | 21·58 |
| Calcium, as oxide, | 1 61 | 2·15 | 1·25 |
| Sodium, as oxide, | . . . | 2·50 | . . . |
| Iron, as ferric oxide, | 0·21 | 0·34 | traces |
| Sulphates, | traces | traces | . . . |
| Chlorides, | . . . | traces | . . . |
| Silica, | . . . | traces | traces |
| Total, | 98·05 | 98·03 | 99·00 |

No. 1 was of Pattinson's manufacture, No. 2 of Jenning's, No. 3 from Germany. The carbonate of magnesia, as manufactured under different conditions, varies very considerably in the degree in which it is a basic carbonate. Deducting the carbonic anhydride of the calcium and sodium carbonates, we have, for No. 1, 94·98 per cent. of magsium carbonate; for No. 2, 89·58 per cent.; and for No. 3, 96·77 per cent.

Two samples of calcined magnesia were examined, with the following results:

| Calcined Magnesia. | No. 1. | No. 2. |
|---|---|---|
| Magnesium, as oxide, | 89·67 per cent. | 96·21 per cent. |
| Water of hydration, | 5·85 | . . . |
| Calcium, as oxide, | 1·89 | 1·19 |
| Sodium, as oxide, | 1·23 | ·80 |
| Iron, as ferric oxide, | ·27 | ·12 |
| Silica, | trace | trace |
| Chloride and carbonate, | trace | . . . |
| Total, | 98·91 | 98·32 |

No. 1 was "Husband's Calcined," and No. 2 was "Powers & Weightman's Heavy Calcined."

*University of Michigan, School of Pharmacy*, Nov. 5, 1878.

## NOTE ON SODIUM SALICYLATE.

By Charles W. Drew, Ph.B.

The very extensive and increasing application of sodium salicylate in medical practice renders it desirable that some method which can be relied upon to produce a pure and uniform product, and which at the same time affords the greatest attainable simplicity of manipulation, should be generally known among pharmacists. With a view toward supplying this need, I would call attention to the results here embodied, which are derived from personal observation and experience in the manufacture of the salt.

Salicylic acid, $C_7H_6O_3$, is a bibasic acid, though the neutral salts of the monad metals have not as yet been prepared. The chief medicinal salt of salicylic acid is the acid sodium salicylate, $NaC_7H_5O_3$. This salt may be, and has been, prepared in several ways, most of which have been more or less unsatisfactory, either from the impurity or variability of the product, or from the complicated nature of the process itself.

The simplest methods for the preparation of the salt are by the treatment of salicylic acid with either the sodium monocarbonate or sodium dicarbonate. If the normal carbonate is employed the reaction which takes place is in accordance with the formula: $2(C_7H_6O_3) + Na_2CO_3.10aq. = 2(NaC_7H_5O_3) + CO_2 + H_2O + 10aq.$

From this reaction we deduce the fact that 1 part of salicylic acid, treated with 1·036 part of crystallized sodium monocarbonate, yields 1·15 parts of sodium salicylate.

If the acid sodium carbonate is employed, the reaction is expressed by the formula: $C_7H_6O_3 + NaHCO_3 = NaC_7H_5O_3 + CO_2 + H_2O$.

This similarly admits the deduction that 1 part of salicyic acid treated with ·608 part of acid sodium carbonate pields 1·17 parts of sodium salicylate.

For extemporaneous dispensing of sodium salicylate in solution, the following formula will be found available:

| | | |
|---|---|---|
| ℞ | Salicylic acid, . . . . | 1230 grs. |
| | Sodium dicarbonate, . . . . | 745 " |
| | Water q.s. for 6 fl. ℥. | |

Each minim of the resulting solution contains ·5 grain of sodium salicylate.

The best method of making sodium salicylate for general dispensing

is as follows: Take of pure crystallized salicylic acid (that of German manufacture is the best in the market) 1 part. Take of pure crystallized and uneffloresced sodium monocarbonate (that obtained by the recrystallization of commercial sal soda is usually sufficiently pure) 1·04 part. Add to the acid in a glass or earthenware vessel sufficient water to form a paste, and gradually add the sodium carbonate. The salt is readily decomposed, the carbonic anhydride being evolved, and the sodium salicylate formed entering into solution in the water present. If the constituents were pure, filtration should be unnecessary, but if required filter through paper, or preferably, strain through fine muslin into a water-bath of block tin or porcelain. Heat until the dissolved carbonic anhydride is expelled, and then test the reaction of the solution either with test paper or with a few drops of test solution. In this connection it may be well to state that the removal of a few drops and the addition of the test liquid is preferable, as the action upon test paper is rather indistinct unless the solution be quite considerably diluted. If the solution is alkaline, add salicylic acid in slight excess; if any considerable excess of acid is present, render nearly neutral by addition of sodium carbonate. It is necessary to be quite careful in this, as any considerable excess of acid will render the salt, to a slight extent, insoluble in water, and the slightest excess of alkali will invariably render the salt of a shade varying from a light gray to a deep lead color. Evaporate to dryness upon the water-bath with constant stirring, avoiding more than a moderate heat, lest the salt be partially decomposed and some of the salicylic acid be sublimed.

The resulting salt will be of a very nearly pure white color, and exhibits no tendency to change upon exposure to the air. It is readily and completely soluble in nine-tenths of its weight of water at 60°F., and in about ·65 of its weight at 180°F., the solution being of a light amber color.

Alcohol of 95 per cent. dissolves about one-tenth of its weight at 60°F., and at 120°F. about one-seventh of its weight of the salt, while glycerin at 180°F. dissolves 50 per cent. of its weight, the solution remaining perfect when cooled to 60°F.

This process differs somewhat from any heretofore recorded in the journal, and while all of them *may* yield satisfactory products, I consider that this has several manifest advantages over any of them.

Mr. John Williams ("Am. Jour. Pharm.," 1876, p. 546) gives a

process in which sodium hydrate is used to saturate the salicylic acid. He gives it as his experience that "the sodium salicylate made from the artificial salicylic acid is liable to be more or less impure and indefinite in composition." It certainly will be unless great care is taken to employ pure salicylic acid, yet I consider that the best crystallized acid of the market is sufficiently free from impurities to insure a pure and uniform product. The principal arguments against the employment of sodium hydrate for the saturation are the high price of the pure article and the solubility of any accidental excess in alcohol if purification is attempted by recrystallization. The recrystallization from alcohol, owing to its ready solubility, is difficult, entailing a considerable loss of alcohol as well as time, and is usually regarded as rather an unsatisfactory process.

Mr. G. W. Kennedy ("Am. Jour of Pharm.," 1877, p. 592) saturates an indefinite quantity of a 20 per cent. solution of sodium hydrate with salicylic acid, by adding it *until it is no longer dissolved* (italics mine), filters and evaporates to dryness. The addition of the acid thus indefinitely would be liable to insure a greater excess of salicylic acid than was desirable, and thus impair the purity of the salt.

Mr. Pennypacker ("Am. Jour. of Pharm.," 1878, p. 114,) employs the acid sodium carbonate, adding it to the acid mixed with water, *as long as there is effervescence*, evaporates to dryness upon a water-bath, dissolves in alcohol, *pours off the clear liquid*, and evaporates the alcoholic solution to dryness.

The indefiniteness of the terminal reaction is apparent, and will, unless very carefully manipulated, result in an unsatisfactory product. The existence of any residue insoluble in alcohol indicates either the unsuitable character of the materials employed or else an avoidable excess of the sodium dicarbonate, in which case the salt would be to a greater or less extent colored. If, on the other hand, salicylic acid were present in excess, it would be readily dissolved by the alcohol and be mixed with the supposedly purified salicylate. The process also necessitates a loss of alcohol, or the labor necessary for its recovery.

The process which the author recommends has been employed practically for some time, and has been found to be the most economical and satisfactory of any which have been tried for the manufacture of the salt upon a large scale, and it will doubtless be equally satisfactory in the hands of careful pharmacists.

*Brooklyn, N. Y.*, Nov. 18, 1878.

# MEDICATED SOLUTIONS OF ALUMINA.

By Henry G. Debrunner, F.C.S.

*Read at the Pharmaceutical Meeting, November* 19.

To the class of remedies that once had an almost general reputation, and now, in spite of their therapeutic value, are scarcely used, belongs the benzoinated solution of alumina, the preparation, dose and mode of application of which we find in the U. S. Dispensatory, page 1011, 13th edition.

Similar to Pagliari's styptic liquid, it surpasses the same in efficiency and purity in many respects, besides being, at the same time, by no means an expensive article (*vide* U. S. Dispensatory, page 174, 13th edition).

Instead of using an alum solution, as done by the before named Roman pharmaceutist, a solution of sulphate of alumina, $Al_2O_3,3SO_3$, previously saturated with alumina hydrate so as to make its composition approach that expressed by the formula $(Al_2O_3)_2,3SO_3$, is subjected to benzoination by being heated for several hours with a certain quantity of bruised benzoin. By this treatment a number of the constituents of benzoin are dissolved in the solution, among which benzoic acid, and a resinous, brownish body possessed of aromatic odor are the most important. By this mode of preparation the existence of free non-combined sulphuric acid, which might be found in Pagliari's original solution, is rendered impossible.

If properly prepared, the specific gravity of this compound is 1·26; it is perfectly clear and of sweet balsamic odor and taste. As to its medicinal qualities and value, I wish to refer to the authorities quoted in the U. S. Dispensatory, page 1011, 13th edition.

The styptic properties of this preparation are due to the immediate coagulation of blood or albuminous substances in general which it produces, assisted by the presence of benzoic acid. Unlike carbolic acid, which is possessed of a destructive action over the lower grades of organic life, whether vegetable or animal, it acts by mere coagulation, thus excluding the air, the vehicle of numerous spores. These considerations induced me to make experiments, with the view of obtaining a *carbolized* benzoinated solution of alumina, and of uniting the disinfecting power of carbolic acid with the antiseptic properties of the benzoinated solution. I found that 3 per cent. ($\frac{1}{2}$ f.oz. to pint) of

carbolic acid could easily be incorporated into the first-named preparation. From the fact that the carbolic acid is easier taken up by a basic alumina solution than by water, it may be possible that it exists in the same as carbolate of alumina, which, however, is to be proved by further experiments. Carbolized solution of alumnia may be used in the same way and mode as the benzoinated preparation. It is a clear liquid of 1·25 to 1·27 sp. gr.; the odor of carbolic acid is but slight, it being overpowered by that of benzoin. If exposed to cold it becomes slightly turbid, but will clear again on elevation of temperature.

*Chemical Laboratory, Black Diamond Steel Works, Pittsburgh*, Nov. 15, 1878.

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## UNGUENTUM AQUÆ ROSÆ.

By George W. Kennedy, Ph.G.

During the past few years, quite a number of articles have appeared in the various pharmaceutical journals on the preparation of cold cream, recommending a change in the present formula. Some of the writers favored the addition of borax, the intent and purpose of which I believe is to whiten and improve the appearance of the ointment. The refrigerant properties of borax would make it an excellent addition, when applied to chapped hands or lips, and for all other purposes for which cold cream is generally used, were it not for the many things which are often prescribed with the ointment, such as calomel, I cannot see that there would be any serious objections or reasons of a persuasive character to prevent its entering as one of the constituents of cold cream; but it is chemically incompatible with the mild chloride of mercury, reducing it to mercurous oxide, and, instead of dispensing an elegant-looking ointment, a dirty lead-colored salve is furnished, quite different in appearance from what it is expected to be.

On account of the ointment as now prepared being liable to become rancid when kept for some time, and on account of the separation of the rose water, some propose glycerin as a substitute for the water, with an increase of either wax or spermaceti, or both. This I consider a decided improvement, although some objections are made to it, owing to the increased quantity of solid material which is not absorbed by the skin and produces an unpleasant sensation of stickiness.

Some authors favor the substitution of olive oil for the sweet oil of

almonds. I cannot see that the former has any advantage over the latter, but, on the contrary, I claim that the almond oil is far superior, therapeutically and pharmaceutically, on account of its containing more olein, although the difference is not much. Olive oil contains 72 per cent., while the oil of almonds contains 76 per cent. Olive oil is also more liable to oxidation, more disposed to rancidity, and does not make an ointment as handsome in appearance as almond oil.

I had occasion to make for a country practitioner considerable quantities of cold cream in the summer season, as well as in the winter, and owing to the high price of almond oil at that time he suggested that I use something cheaper, and proposed olive oil. I made some as requested, and of as fine a quality of olive oil as could be obtained, leaving the water of roses out and using attar of roses instead, with an increased quantity of olive oil. Before it was all used he made complaint that it was quite rancid, and of a very disagreeable odor, and that he could not use it and was compelled to throw it away. That was the last cold cream I prepared for the Doctor with olive oil.

Coming now to the Pharmacopœia process, I also make an objection, although my objection may appear trifling to some pharmacists. I have reference to the rose water. When prescribed alone I believe the ointment meets the requirements of the physician, furnishing a cooling application to irritated or excoriated surfaces. It is bland, and makes a very elegant ointment; but when we have ointments to prepare like the following, which I frequently have occasion to dispense,

| | | | | | |
|---|---|---|---|---|---|
| ℞ | Hydrarg. ox. rub | grs. vi | ℞ | Zinci oxidi, | ℥iv |
| | Ungt. aq. rosæ, | ℥i or | | Ungt. aq. rosæ, | ℥i |
| M. ft. ungt. | | | M. ft. ungt. | | |

then I contend there are objections to the present formula. After rubbing the oxide to an impalpable powder, preparatory to mixing it with the cold cream, then comes the trouble in mixing the powder and ointment; most of the water is pressed out, thereby losing at least about 15 per cent. of its weight, furnishing a salve much stronger than perhaps the prescriber is aware of, besides the annoyance and inconvenience the apothecary has to contend with. The object of the writer is to present a formula for an ointment which he has been using for some time with perfect satisfaction, and which will obviate this objection and fill all requirements equally as good if not better than the

ointment of the Pharmacopœia. As it contains no water, it is proposed to name it *Unguentum Rosæ*. The following is the formula:

| | | |
|---|---|---|
| ℞ | Ol. amygd. dul., | ℥ix |
| | Cetacei, | ℥iss |
| | Ceræ albæ, | ℥i |
| | Ol. rosæ, | grs. vii |

Melt together, over a gentle heat, the oil, spermaceti and wax, and when it commences to cool add the oil of rose, and constantly stir until cold.

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## GLEANINGS FROM THE GERMAN JOURNALS.

By Louis von Cotzhausen, Ph.G.

**Determination of the Presence of Iodine and Chlorine in Bromine.**—Ernst Biltz suggests the following tests:

1. *For Iodine.*—Dissolve the bromine in 40 times its bulk of water, macerate the greater portion of this bromine water with powdered iron, allow to settle, decant, add solution of starch to the decanted liquid, and then add a few drops of bromine water; the presence of iodide of iron will then be indicated by the immediate formation of a blue layer of iodide of starch beneath the upper yellow liquid. The author claims that this test will yield a reaction if the bromine contains $\frac{1}{10}$ per cent. of iodine.

2.—*The test for chlorine* is that proposed by Duflos, who treats the bromine with ammonia water (thus forming bromide of ammonium), digests this solution with barium carbonate, filters, evaporates to dryness, heats to redness, and treats the residue with absolute alcohol, which will not dissolve chloride of barium.—*Pharm. Centralh.*, Sept. 19, 1878, p. 354.

**Presence of Phosphoric Acid in so-called C. P. Hydrochloric Acid.**—E. Holdermann strongly recommends the testing of all chemicals and preparations purchased, stating that a chemical analysis of acidum hydrochloricum purum, obtained from one of the largest chemical laboratories proved it to consist of 89·25 per cent. of officinal (Ph. Germ.) phosphoric and 10·75 per cent. of officinal hydrochloric acid; both acids had probably been mixed accidentally.—*Arch. d. Pharm.*, Aug., 1878, p. 101.

**Chili Borates and Boracic Acid.**—Chili saltpetre-caves and their surroundings yield a large percentage of borates and boracic acid. C. Reichardt publishes the following constituents of a new pulverulent Chili mineral, analyzed by him:

| | | | |
|---|---|---|---|
| Water, | 18·107 | Sodium chloride, | 3·763 |
| Sand and clay, | 15·056 | Potassium chloride, | 1·310 |
| Silicic acid, | 0·070 | Calcium sulphate, | 32·247 |
| Oxide of iron and aluminium, | 0·840 | Sodii boras, $=Na_2B_2O_7=$ | 26·611 |
| Lime, | 0·727 | | |
| Magnesium chloride ($MgCl_2$), | 1·109 | | 99 840 |

The mineral contains 18·594 per cent. of boracic acid.—*Arch. d. Pharm.*, Aug. 1878, p. 131.

**Salicylic Cotton, Benzoic Cotton and Liquor Aluminæ Aceticæ as Antiseptics.**—5 *per cent. salicylic cotton* is made, according to Prof. Paul Bruns, by saturating 1 kilo of cotton with 4 liters of a solution of 50·0 grams salicylic acid, 20·0 grams castor oil (or castor oil and colophony, each 10·0 grams), in 3·930 liters (3930 cc.) of alcohol.

10 *per cent. salicylic antiseptic cotton* is made by saturating 1 kilo of cotton with a solution of 100·0 grams salicylic acid, 40·0 grams castor oil (or castor oil and colophony, each 20·0 grams), in 4·860 liters (4860 cc.) of alcohol.

*Benzoic cotton* is made in the same manner, substituting benzoic for salicylic acid.

*Liquor aluminæ aceticæ* is considered by the author far superior to thymol, carbolic and salicylic acid, etc., for disinfecting purposes, for dressing wounds and for permanent antiseptic irrigation; he uses a diluted 3 per cent. solution, prepared from 72·0 grams alum, 115·0 grams acetate of lead, and sufficient water to make the filtrate measure a pint; this solution he frequently dilutes with 3 to 6 times its bulk of water.—*Pharm. Centralh.*, Sept. 26, p. 361–362..

**Detection of Organic Poisons.**—E. Heintz proposes to evaporate the liquid containing organic poisons with white bole, previously treated with hot hydrochloric acid and well washed with water. The residue is exhausted with chloroform or other solvents, and retains fats, resins and other impurities.—*Zeitschr. f. Anal. Chem.*, 1878, p. 166.

## NOTES ON A NEW DOUBLE IODIDE.

By Frederick W. Fletcher, F.C.S

*Read at the British Pharmaceutical Conference.*

The strong tendency exhibited by many of the iodides to form double salts is well known. Within the last ten days a new and striking instance of this characteristic feature has come under my notice, and the compound produced is in many respects so remarkable, that I venture to submit the few notes which I have been able to make respecting it, to the consideration of the Conference.

In experimenting upon a complex solution, which amongst other things was known to contain a salt of quinia, I was somewhat astonished to find a copious scarlet precipitate produced on the addition of potassium iodide. The color was not sufficiently vivid for that of mercuric iodide, and with the exception of the little-known but curious double iodide of mercury and copper, no iodide with a like appearance produced under similar conditions, suggested itself.

Having collected and washed the precipitate, I proceeded to examine it qualitatively, when it was found to contain besides the halogen, bismuth and quinia. Solutions of these last two substances were then prepared and mixed, and I found that not only in each case was this brilliant precipitate obtained on the instant that an iodide was introduced, but that by experimentally regulating the proportions of the three salts, it was possible to remove the whole of the quinia, the bismuth and the iodine from the solution in the form of this beautiful double salt.

A few ounces of the compound having been carefully prepared, I submitted a portion to analysis in order to ascertain the relative proportions in which the elements present were combined, and thus arrive at its proper formula.

The bismuth was thrown down from a solution of the salt in ammonium citrate containing excess of acid, by hydrogen sulphide, 1 gram yielding ·322 gram $Bi_2S_3$, equivalent to 26·2 per cent. of metal.

The quinia was estimated in a similarly prepared solution by Allen's ether method, a process which always gives unexceptionable results.

1 gram of the salt yielded ·202 gram anhydrous quinia, or 20·2 per cent.

The iodine was separated as a silver salt, 1 gram yielding ·989 gram AgI, equal to 53·4 per cent. of iodine.

From these results it is evident that the salt is a compound of tri-iodide of bismuth and hydriodate of quinia, in the proportion of two molecules of the former to one of the latter substance, and it would therefore have the formula $(BiI_3)_2C_{20}H_{24}N_2O_2.HI$.

The theoretical and actual results bear the following relations:

| | Calculated. | Found. |
|---|---|---|
| Bismuth, | 25·7 | 26·2 |
| Quinia, | 19·9 | 20·2 |
| Iodine, | 54·4 | 53·4 |

The salt is very sparingly soluble in cold, but more freely in hot water.

Rectified spirit dissolves it slightly in the cold, but very readily when warmed.

It is completely taken up by an alcoholic solution of potassium iodide, forming a brilliant crimson solution.

It is decomposed by the stronger acids with liberation of iodine. Digested in strong solution of ammonia, its color is destroyed, and an insoluble residue of oxide of bismuth and quinia remains.

Gradually heated in a porcelain crucible, it at first fuses to a shining purplish-black mass, and as the temperature increases, fumes of iodine together with scarlet colored vapors are evolved, which condense upon a cold surface, in a particolored deposit, which presents under the microscope a crystalline structure.

When a few grains of the salt are rubbed upon paper and gently warmed, like the double iodide of mercury and copper, it becomes black, regaining its original color gradually, if allowed to cool spontaneously, and instantly if the paper be laid upon something cold, such as a steel knife or bottle of water.

Whether this compound possesses any special medicinal value is a point which, of course, experiment can alone determine. All that can at present be said is, that if it is desired to administer quinia and bismuth in conjunction with iodine, the salt under notice affords an admirable method of doing so.

From a chemical point of view, the salt is interesting, and the decomposition which gives rise to its formation might possibly be found of value as the basis of a volumetric process for the estimation of salts of bismuth and quinia.—*Pharm. Jour. and Trans.* [Lond.], Sept. 28.

## SOLUTION OF IODOFORM AND IODOFORMED LINT.

By G. A. Keyworth, F.C.S., Hastings.

*Read at the British Pharmaceutical Conference.*

When iodine tincture is shaken with a fragment of fused potash so as to remove the color, the essential step in the preparation of iodoform, the characteristic odor of that substance appears. In this simple form the fluid possesses great energy as a therapeutic agent, more especially in the healing of indolent sores, for which purpose iodoform is so highly valued by some medical practitioners. Iodine ointment of various strengths, alone or combined with a small quantity of carbolic acid, has long been known to have great power in producing cicatrization and granulation with obstinate ulcers, sores and wounds. The odor of iodoform, which is to many persons very repulsive, may be readily concealed by the addition of eau de cologne or lavender water.

The alcoholic solution above described, when so treated, furnishes an elegant substitute for iodine tincture, with its dark color, strong chlorine-like odor, and staining property. Lint soaked in this colorless perfumed liquid, and allowed to dry, is a singularly useful application for various sores, promoting the healing process with much energy. Equal parts of this fluid and glycerin form a very useful combination for many purposes.—*Phar. Jour. and Trans.* [Lond.], Sept. 14.

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## THE EXTRACTION OF EMETIA FROM THE DEPOSIT IN VINUM IPECACUANHÆ.

By George Brownen, F.C.S.

*Read at the British Pharmaceutical Conference.*

It is not my intention to direct the attention of this Conference to the chemistry of ipecacuanha; that has been done by our secretary, Professor Attfield and others. At the Birmingham meeting in 1865, a paper was read by Mr. Johnson, in which some of the causes at least of the instability of ipecac wine were noticed and suggestions made; yet in the revision of the Pharmacopœia after that date these suggestions were either set aside or forgotten and the same objectionable and unsatisfactory formula is preserved by authority in the Pharmacopœia of 1867.

I do not intend to dilate on the turbid solution and unsightly deposit which continuously forms as long perhaps as there is anything in the

form of alkaloid to deposit from this wine; neither do I ask you to decide which course should be followed by the dispenser, filtration and consequent weakening of the wine or the use of a turbid inelegant mixture. Ipecacuanha wine will deposit, if made according to the official formula, and that deposit will contain the most valuable and perhaps the *only* valuable constituent of ipecac root, and being mixed with the crystalline tartar adheres to the sides and bottoms of the vessels containing the wine; even if it becomes detached it is not readily or easily diffused by agitation, but is often rejected and thrown away.

Quite recently a considerable quantity of these deposits and incrustations came under my notice, and I determined to try and see if some use could not be made of this waste product.

The semi-crystalline mass was therefore made into a paste with water, and then mixed with calcined magnesia until a marked alkaline reaction was obtained. Calcic hydrate was tried, but the evolution of ammonia and other changes led me to suppose that the emetia might be affected by the lime. After standing for twenty-four hours, the mixture was slightly warmed to complete the reaction, and the resultant mixture spread in thin layers and dried as rapidly as possible at a low temperature. The mass was next reduced to powder and percolated with spirit of wine. The alkaloid associated with some impurities was thus abstracted from the other salts, and it was possibly pure enough to fortify a "weakened" ipecac wine if the necessary proportions were known. Such, however, was not my purpose. The alcohol was therefore removed by evaporation and the emetia dissolved in dilute acetic acid and then precipitated by ammonia; the emetia obtained was fawn-colored and tolerably pure, completely soluble in acids, and precipitated by Sonnenschein's and the other alkaloidal tests.

The process I have described is an adaptation of the process of MM. Pelletier and Dumas, and by this method a considerable proportion of alkaloid may be obtained from the brown-colored crystals and slime, which the pharmacist in his disgust is sorely tempted to throw away as a nuisance and loss.

In Watt's dictionary, vol. ii, page 485, under the heading "emetine," I find the following: "The gallotannate is a white flocculent precipitate soluble in alkalies, it is *neither emetic nor poisonous.*" May not this compound be formed in old ipecacuanha wine and be the cause of its uncertainty and partial inertness even when the wine was "well shaken before taken?"—*Phar. Jour. and Trans.* [Lond.], Sept. 14.

## NOTE ON AN IMPROVED PREPARATION OF ERGOT.

By A. W. Postans, F.C.S.

*Read at the British Pharmacextical Conference.*

It is only right to preface my remarks on this subject with a statement to the effect that the liquid extract I desire to bring before the Conference is what I have considered to be an improvement on the process given in the Pharmacopœia of the United States of America, and the resulting preparation is possessed of stability, activity and good keeping power.

It is at once obvious that however highly esteemed by some medical men the freshly-powdered ergot may be, yet a fluid extract on which reliance can be placed has such manifest advantages in convenience of exhibition, accuracy of dosage, etc., that to find one even equal to the freshly-powdered ergot is a gain.

In the following observations I do not propose to analyze the different samples of ergot, although that is a most important starting point. I do not propose to suggest any new method for the preservation of ergot itself, nor to assert positively to what it owes its activity, and the general history of the drug, as well as its adulterations and occasional admixture with ergot of wheat, ergot of oat, and various other inferior ergots, is so exhaustively dealt with in Pharmacographia that I may fairly pass on; with the intimation, however, that I shall hope, on a future occasion, to give an account of the value of liquors obtained from ergot of oat and ergot of wheat.

The process I have adopted is as follows:

To 20 ounces of freshly-powdered ergot packed in a percolator, the extremity of which had been closed, was added a mixture containing ten ounces each of rectified spirit and glycerin, and 5 ounces of water; the whole was then allowed to macerate for a week, at the expiration of which time the percolation was proceeded with, and the subsequent displacement continued with distilled water until the drippings almost ceased to have any taste or color. Eighteen ounces having been collected of the first liquid, the remainder was evaporated gently in a water-bath to 2 ounces, and then mixed with the previous quantity, so that 20 ounces of this fluid extract exactly represents 20 ounces of freshly-powdered ergot; and I am told by several obstetricians of eminence that it is highly satisfactory.

In conclusion, I desire to point out that the main difference between

the above process and the American consists in the addition, by the United States Pharmacopœia, of half an ounce of acetic acid to each 16 ounces of liquor, thus rendering, in my opinion, an otherwise good preparation nauseus and unpalatable, as well as presenting a difficulty as to the desirability and wisdom of introducing acid into the stomachs of patients. These are points which, at certain times, it is most necessary for the physician to consider and the pharmacist to determine.—*Phar. Jour. and Trans.* [Lond.], Sept. 14.

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## A REACTION OF ORANGE FLOWER WATER.

By R. Reynolds, F.C.S., and C. H. Bothamley.

*Read at the British Pharmaceutical Conference.*

A few months since, the following prescription was presented, and was duly dispensed:

| | | |
|---|---|---|
| ℞ | Bismuth. alb., | ℥iss. |
| | Acid. nitro-mur., dil., | ℥iss. |
| | Tinct. gentian. co., | ℥ss. |
| | Sp. chloroformi, | ℥iss. |
| | Aqua aurantii, ad | ℥viii. |
| | Misce. | |

The patient complained that the mixture, including the deposit, had a pinkish hue, which was not the case to such a degree when the same medicine had been dispensed elsewhere.

Some experiments showed that the coloration was due to a reaction between the orange flower water and nitro-hydrochloric acid. Although we believe that few pharmacists have had this reaction brought under their notice, the fact is already recorded in Hanbury and Flückiger's "Pharmacographia" where it is said of orange flower water, "Acidulated with nitric acid, it acquires a pinkish hue more or less intense, which disappears on saturation by an alkali."

The literature of the question is contained in its most complete form in Gmelin's "Handbook of Chemistry," vol. xiv, page 386. Here we find the following statements under the head of Oil of Neroli, viz., When orange flowers are distilled with water, "the oil which passes over is a mixture of two oils, one easily soluble in water and fragrant, the other sparingly soluble, of less agreeable odor; the latter floats upon the watery distillate and is easily separated (Soubeiran). Orange

flower water, treated with nitric acid, acquires in a few minutes a rose-red color (Ader and others). With oil of vitriol, it becomes rose-colored (LeRoy); but Ader insists that this is only the case when the oil of vitriol contains nitric acid, and, he adds, that it is not colored by hydrochloric acid. Ether, almond oil and castor oil abstract from orange flower water the whole of the volatile oil; the ether solution, mixed with nitric acid, immediately assumes a rose-color and leaves, on evaporation, a fragrant volatile oil (Ader, 1830, 'Journal de Pharmacie,' also Soubeiran)."

Our experiments may be divided into two sections; firstly, the isolation of the soluble oil; secondly, its reactions.

I. In order to separate the soluble oil, 300 cc. of orange flower water were introduced into a glass tube about 1 meter in length and 20 mm. diameter, having its lower extremity drawn out and closed by a pinch cock and india rubber tube, as in Mohr's burette, whilst the upper end was drawn out and fitted to receive a small cork; 60 cc. of absolute ether were added, and thorough agitation effected. After separation, the operation was repeated with 30 cc. of fresh ether. The mixed portions of ether were placed in a small distilling flask, and the ether was evaporated in a current of air. Some of the volatile oil may have passed off with the ether, and a slight odor favored this supposition, but as the flask was constantly coated with ice, owing to the refrigeration caused by the rapid volatilization of the ether, the process of evaporation could hardly have been effected more favorably as regards the avoidance of loss. The oil obtained weighed 2·126 grams =0·71 per cent. upon the orange flower water used. It had solidified towards the close of the process, but rapidly liquefied when evaporation ceased; it possessed a deliciously fragrant odor.

II. The reactions of the oil with nitric acid (normal strength, 63 grams per liter) are those stated for orange flower water by previous observers, but intensified in degree. The color may be described as crimson-red; that with orange flower water is faint red. We have to differ with Ader on two points, viz., we find that pure sulphuric acid produces the rose-color with orange flower water, and that hydrochloric acid does the same; both reactions being much less marked than with nitric acid.

The orange flower water after exhaustion by ether gave no trace of coloration with nitric acid. It was not, however, absolutely deprived

of odor, but had lost its characteristic scent, and now possessed an odor suggestive of rose water.

We may add, that if strong nitric acid be added, drop by drop, to orange flower water, the rose color at first produced is destroyed when the quantities of the two liquids are about equal.

If the orange flower water be agitated with nitrous fumes and dilute nitric acid then added, no color is produced, or if acid, largely charged with such fumes be added to orange flower water the color appears for an instant, but is almost instantly destroyed.

Before leaving the subject of orange flower water it may not be inappropriate to its bearings on pharmacy to quote from Parrish's "Pharmacy" (ed. 1859) the following statement; "Its sedative effects, which are not generally known in this country, and not noticed in our works on Materia Medica, adapt it especially to use in nervous affections. In doses of a tablespoonful, it is found to allay nervous irritability and produce refreshing sleep." If orange flower water has valuable hypnotic qualities it should be welcomed as a desirable rival to various less innocent substances now used for the purpose.—*Pharm. Jour. and Trans.* [Lond.], Sept. 28.

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## NOTE ON PHOSPHORUS IN THE PILL FORM.

By A. W. Gerrard, F.C.S., Teacher of Pharmacy at University College.

*Read at the British Pharmaceutical Conference.*

During the past four years much has been said and written about the dispensing of phosphorus, and various methods have been suggested for presenting this active and useful drug in a form which shall be at once reliable, uniform and elegant. Of the various novel suggestions made none seems to have received anything like a general adoption; and glycerin, resinous and albuminous solutions of this drug are rarely or never seen in the physician's prescription.

Of the two methods by which phosphorus can be exhibited, solid and liquid, the pilular or solid is that to which preference is mostly given, and this preference may be explained upon good reasons. For instance, the material in which the phosphorus is diffused in a pill is small in bulk as compared with an emulsion or mixture, therefore the phosphorus in the pill is more likely to be preserved from change or loss by oxidation and to yield a more uniform therapeutic effect. Again, as a

rule pills do not produce the nauseating effects of a dose of phosphorus in the fluid form; pills are also more convenient and portable.

Of the various methods recommended and mostly used for rendering phosphorus into pills I shall mention two, and the objections attached to them. The first method is to dissolve phosphorus in carbon disulphide, to pour this upon compound tragacanth powder, and make into a mass with water. The other method is to dissolve phosphorus in melted cacao butter, and when cold rub smooth in a mortar, and divide into pills. Of these two processes I give the preference to the former, as the latter is most impracticable, for from the greasy nature and low melting point of cacao bútter it cannot be handled without clothing the fingers with a covering of phosphorescent fat, very annoying to the operator, and the mass does not yield well and regularly under the pressure of the pill-cutter, but breaks into irregular fragments, which necessitates a remixing. My principal objection, however, to both processes is that much loss of phosphorus takes place by oxidation during the process of manipulation, and unless the manipulation be dexterously and expeditiously carried out this loss is considerable; the prevention or reduction of this loss to a minimum is the main object of this note, and the following is the process I have employed for a period extending over a year with very good results.

I will give a formula for thirty pills, each pill to contain one-thirtieth of a grain of phosphorus.

| | | |
|---|---|---|
| Take of | Phosphorus, | 1 grain. |
| | Carbon bisulphide, | 20 minims. |
| | Compound tragacanth powder, | 90 grains. |
| | Chloroform, | a sufficiency. |
| | Water, | a sufficiency. |

Place the phosphorus in a wedgwood mortar, pour over it the carbon bisulphide, then add the tragacanth powder and ten minims of chloroform, mix into a uniform product, then add water a sufficiency to form a pill mass, maintaining during the whole of the process the presence of chloroform; divide into thirty pills.

The novelty in this method depends upon the presence of chloroform, and the explanation of the part it serves is as follows: Whilst chloroform is present in the mortar it forms a heavy vapor which surrounds the phosphorus, preventing the contact of air and the consequent oxidation; of course, as soon as the materials are kneaded into

the necessary uniform mass, the whole of the chloroform is allowed to evaporate; when the chloroform has evaporated, some surface, and only surface, oxidation takes place.

In conclusion, I would advise those who wish to try the experiment of dispensing phosphorus to compare the method I have given both with and without chloroform. In the one case you have much phosphorescence and irritating fumes evolved; in the other there is no apparent phosphorescence and very little fume. In fact, I have worked eight ounces of mass into pills easily by this new process, which otherwise would almost have been an impossibility. The greatest advantage, however, I consider it offers is that the patient gets the nearest possible approximation to the dose given in the prescription.

Mr. Greenish said he had paid some little attention to the dispensing of phosphorus pills, and the plan he adopted was somewhat different to that described. He dissolved the phosphorus in bisulphide of carbon, then mixed the cacao butter with it, and after that anything else required. By putting the cacao butter into the mortar with the solution he considered the difficulty mentioned by Mr. Gerrard was got over.—*Pharm. Journ. and Trans.* [Lond.], Sept. 28.

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## PLANTS USED by the INDIANS of the UNITED SATES.

By Dr. Edward Palmer.

(Concluded.)

Textile Plants.—*Yucca baccata.* This is one of the most useful plants to the Indians of New Mexico, Arizona, and Southern California. Its fruit is eaten while fresh and in the dry state. It grows from two to eighteen feet in height, and becomes a tall tree further southward, varying in diameter from eight to twenty inches. The bodies of these plants are very fibrous. The Indians and Mexicans when in want of soap cut the stems into slices, beat them into a pulp, and mix them with the water when washing as a substitute for soap, for which it answers finely. The leaves are generally about two feet in length and are very fibrous. In order to remove the bast the leaves are first soaked in water, then pounded with a wooden mallet, at the same time occasionally plunged into water to remove the liberated epidermis. Then if not sufficiently clean and white it is returned to the water for a time and again put through the beating process; generally the second course is sufficient. The fibres of the leaves being strong, long and durable are adapted for Indian manufactures, and the savages of Southern California make therefrom excellent horse blankets.

All the tribes living in the country where this plant is found use it to make ropes, twine, nets, hats, hair brushes, shoes and mattresses.

The Diegeno Indians of Southern California have brought the uses of this plant to notice by the various articles they make from its fibres, and sell to white settlers. In preparing a warp for the manufacture of saddle blankets, it is first loosely twisted, then when wanted it receives a firmer twist. If the blanket is to be ornamented, a part of the warp during the first process is dyed a claret brown, oak bark being used for that purpose. The loom in use among the Indians of to-day is original with themselves, and not borrowed, as some suppose, from the Spaniards. It is a simple affair, consisting of two round, strong, short poles, one suspended and the other fastened to the ground. Upon these is arranged the warp. Two long wooden needles with eyes are threaded with the filling which is more loosely twisted than the warp, in order to give substance or body to the blanket. Each time that the filling is thrust between the threads of the warp by one hand, the Indian female with a a long, wide, wooden implement in the other hand, beats it into place. This tool resembles a carving-knife, but is much larger and longer. One edge is thin, and in this is made a number of teeth or notches not so sharp as to cut.

This plant, so fibrous and so abundant on land utterly worthless for the growth of anything more valuable, can be had for the gathering; and as paper materials are scarce, either alone or mixed with straw, would be valuable in the manufacture of that article.

*Y. brevifolia.*—The leaves of this plant are short, and not useful for Indian purposes, but it produces abundance of large seeds which contain much nutrition; they are ground fine, and either eaten raw or cooked in the form of mush by Southern California Indians. Vast tracts are covered with it, which assume a forest-like appearance about the Mojave river, Southern California, having trunks from ten inches to two feet in diameter, and twenty-five feet high, with numerous branches. Not only is the leaf fibrous, but the body is more so. As raw material for paper it is excellent.

*Y. Whipplei.*—This plant in bloom is one of the finest garden ornaments, very common over most parts of California. The young flowering stems, while in their tender condition, are either eaten raw or roasted by the Indians. The seeds are gathered, ground into flour and eaten. The leaves yield a very soft white fibre, which is capable of being made into very nice thread. Indians use this fibre to form a padding to their horse blankets, the outer part of which, being made of the fibre from the *Yucca baccata*, is very rough. A wooden needle is threaded with twine made from the same fibre, and the lining is firmly quilted to the saddle blanket, forming a soft covering, without which it would injure the animal's back.

*Y. angustifolia*, a very common plant in Utah and Arizona; the leaves yield the softest fibre of all the *Yuccas*, and, like all of them, is adapted to manufacturing purposes, especially for paper. The young flowering stems are used by Indians after the manner of asparagus; the same may be said of all the *Agaves* and *Yuccas*. They are eaten cooked or raw, and are not to be despised. The root is used, after being pounded up, as a substitute for soap.

*Agave utahense.*—The Pah-Utes strip the leaves from the heart of the plants of this species, then heat stones, upon which the hearts are laid; the youngest leaves are next placed on, then weeds or grass, and finally a coating of earth over all. This

kiln remains three days, or until the contents are cooked, then it is uncovered. The hearts are either consumed as food immediately, or pounded fine and pressed into flat, long, irregular-shaped cakes, about ten inches wide and fifteen long. They have a pleasant sweet taste, but the dirty black color might be objectionable to some. It is very nutritious, and the Indians of Utah become quite fat while living upon it. The tender inner leaves, baked with the hearts, are pounded and pressed by the hands into flat cakes, but are not so sweet or palatable as the hearts, and are full of fibres of a brown color. Its fibrous nature adapts these cakes for transportation. Indians in traveling or hunting carry them tucked under their belts, and take off pieces as they go along to chew, spitting out the fibre or use it for gun wads. The hearts of all the *Agaves* when roasted yield this palatable kind of food.

*A. deserti.*—This is on the whole one of the most useful of natural productions to the Arizona, New Mexican and Lower California Indians. The heart of the plant, after being roasted, is a nutritious article of diet; from it is distilled a strong liquid called *mescal* by Mexicans; the seeds are ground into flour and eaten; the leaves are long and very fibrous, and are cleaned like those of *Yucca baccata*. Sometimes, after the leaves are dead and quite dry, they are pounded until the epidermis is separated. The fibre thus cleaned is not so smooth and white as that soaked first in water, but very strong and durable ropes, mats, nets and sewing thread are made therefrom. This is a very abundant plant, covering many thousands of acres of land, unfit to grow anything more useful. A plant that contains so much fibre, surpassing in length and strength many other fibres in use for cordage and for paper, must some day be cultivated on the desert wastes of the United States.

*A. Shawii*, one of the finest garden plants, but the fibre is only suitable for paper, being short. The Indians are very fond of a sweet honey-like nectar found in the base of its flowers; in fact, it tastes like honey and water. It is only found near San Diego, California.

WILLOW TREES.—Those along the Colorado river, Arizona, yield abundance of long, soft bark, from which the Indians on this stream make ropes and twine for domestic purposes, as well as sandals and mats. The females generally dress scantily; only that part of the body from the waist to the knees is hidden from view. This custom is observed by most of the Indian females living along the Colorado river. They strip off the bark from the willow trees and bury it in blue mud for a few days, after which it is taken out, washed clean and dried. It is now soft, pliable and easily handled. Being cut into requisite lengths, they are fastened very thickly to a belt of the wearer.

The Colorado river Indians are said to make a fine drink from the flowers of the willows.

*Apocynum cannabinum.*—The Indians of Southern Utah, California and Arizona use the fibre prepared from the stems of this plant to make ropes, twine and nets, and before the advent of Europeans it was used in the manufacture of various articles of clothing. In order to remove the fibre the woody stems are first soaked in water, the bast with the bark is then easily removed. The latter being washed off, leaves a soft, silky fibre of a yellowish-brown color, which is very strong aud durable. I have seen ropes made of it that have been in constant use for years.

*Urtica holosericea*.—The fibre of this plant is used by the Indians of Southern California to make their bow strings. In order to separate the fibre the plant has to go through the same process as hemp; its fibres resembling that of the latter, being equally strong and durable.

*Cowania mexicana*.—This tree before the advent of Europeans was the great source from which the Nevada and Utah Indians obtained the materials for their dress goods. The outer bark is rough, but the inner is soft, silky and pliable, and of a brownish color. It is removed in long strips, varying in width, a desirable quality in a bark that is used in the manufacture of clothing, sandals and ropes. These articles were formerly made by braiding strips of bark together, or woven with the hand loom. Females made skirts from strips of this bark by braiding a belt to which they suspended many strips of the same material, hanging down to the knees like a long fringe; the rest of the person was naked in summer. Mats were also made from this bark which were used as beds.

MEDICINES.—*Chlorogalum pomeridianum*, common soap root of California, and called by Indians and Mexicans *Amole*. It produces a large bulb which yields a great quantity of saponin, very good for washing, for which purpose it is much used by poor people and the Indians of California. The rough covering of the root is formed into bunches tied up and used for hair brushes by the Indians.

*Datura meteloides* (Jamestown weed).—The California Indians make a decoction of this plant which is given to young females to stimulate them in dancing. After the root is bruised and boiled in water, the liquid, when cold, is taken internally to produce a stupefying effect, and is much used by California Indians.

The Pah-Utes call this plant *Main-oph-weep*. They bruise the seeds, soak them in water and expose the mixture to the sun's rays to cause fermentation. This being effected, the liquid is drank and has the same narcotic effect as the preparation made from the plant or root, with the alcoholic effect added.

*Nicotiana trigonophylla, N. Bigelovii, N. attenuata*.—The leaves of all these species of *Nicotiana* are used as tobacco by the Indians of Arizona, Utah, New Mexico and Southern California. The strength is said to be greater than that of the cultivated variety, though the leaves are smaller.

*Ligusticum apiifolium*, Angelica of the settlers of Utah, *Pahnet-snap* of the Pah-Utes.—It is a favorite medicine with these Indians. The root is bruised and used as a poultice for sprains and bruises. A tea is made from the roots and is taken internally for pain in the stomach. The Indians if afraid of catching contagious diseases fill their nostrils with pieces of the root. The strong, aromatic, carroty smell may have induced them to believe in the efficacy of this plant as a prophylactic.

*Berberis aquifolium* or *Oregon grape*.—From the roots of this plant a decoction is made in water, or they are steeped in liquor, and taken internally. It is a good remedy for general debility, or to create an appetite, and is considered equal to sarsaparilla in its medicinal virtues. It is a favorite medicine with the California Indians.

*Anemopsis californica, Yerba Mansa* of the Mexicans.—The root of this plant is a great remedy among the Indians of Arizona, and Sonora in Mexico, and Southern

California. It has a strong peppery taste and odor. A tea made from the roots and a powder prepared from the same and applied to venereal sores, are a great remedy. The powder is advantageously used on cuts and sores, as it is very astringent. The leaves, after being wilted by heat and applied to swellings, are a sure cure.

*Achillea millefolium*, Yarrow of the settlers of Utah. The Pah-Utes make a tea from this plant, and take it internally for weak and disordered stomachs. It is much used by whites in the form of bitters.

*Curcurbita perennis*, called Chili Cojote by Mexicans.—The pulp of the green fruit is used, with a little soap, to remove stains from clothing. The roots of this plant are large and long, and when macerated in water, are applied to piles, generally with good effect. The seeds are ground fine and made into mush, and eaten as food by many Indians of Arizona and Southern California.

*Euphorbia polycarpa*, called by Mexicans Golendrina.—A strong decoction made from this plant and applied to snake bites soon produces reaction. Many cures effected in this way are reported. In fact, the Indians of Arizona and Southern California rely entirely upon it in such cases. Some years since, being in San Diego, and wading in the salt water, a fish (*Sting-Ray*) plunged the bony projection at the base of its tail into my left foot, and soon the swelling and pain became excessive. A Mexican woman made several gallons of a very strong decoction from this plant, and plunged my leg up to the knee into it while hot, and in a few hours relief came.

*Eriodyction glutinosum*, *Yerba Santa* of the Mexicans, and a great medicine among the Indians of Southern Utah, Arizona and California. A decoction made from this plant, and taken internally for rheumatism and partial paralysis, or applied externally, is an excellent remedy. For affections of the lungs, the leaves are used by smoking or chewing dry, or a tea is made from them and drank.

*Micromeria Douglasii*, *Yerba Buena* of the Mexicans.—This is an interesting plant, growing near the sea-coast of California, having a strong minty smell. It is a favorite medicine with the Mexican population of California. The Indians of the same section prepare a tea from it, which is used for fevers and colds. In case of headache, a quantity of the plant is bound round the head.

*Artemisia tridentata*, commonly called sage brush.—The Pah-Utes make a strong tea from this plant and take it internally for headache, colds and for worms. It is also a good stimulant, prepared either with water or liquor. It yields a pungent oil which would be a profitable article of commerce.

*A. filifolia*, *Southern wood*.—This plant on distillation yields a very penetrating oil which is good for liniments, and the Pah-Utes make a decoction from it excellent for swellings and bruises.

*A. ludoviciana*, *A. dracunculoides*.—The seeds of these two species are gathered by the Pah-Utes, ground fine, made into mush and eaten. It is anything but a tempting dish, having a dirty look and strong taste.

*A. ludoviciana*.—This plant possesses medicinal virtues. The Pah-Utes make a strong tea of it and use it internally to assist child-birth, whenever assistance is required, which is seldom. In case of hemorrhage from the nose they stuff wads of the fresh plant into the nostrils.

*Oreodaphne californica.*—This fine evergreen tree of California has a very strong spicy odor. By rubbing the hands and face a short time with the leaves a very distressing headache will be produced. Hahnemann is not the only discoverer of the fact that like cures like, for long before he was born the Indians of California were aware of the power which this plant had to produce a headache in those that were well and to cure those who are afflicted with it.

*Erythræa venusta*, a common remedy for ague by Indians and Mexicans of Arizona and Southern California. A tea is made of the plant and drank, and is certainly a very good substitute for quinia.

*Pæonia Brownii*, by Mexicans called *Peo-neo.*—The root of this plant is used by the Indians of Southern California for colds, sore throats and for pain in the chest. It is mealy and tastes somewhat like licorice. After being reduced to powder, it is either taken in that form internally or made into a decoction.

*Grindelia squarrosa.*—A decoction made from this plant is used by Mexicans and Indians of Southern California to cure colds. It is taken internally.

*Lygodesmia spinosa.*—This plant produces a short, fine, silky substance just at the juncture of the roots with the branches, which is used by the Digger Indians to stop the bleeding in gun-shot wounds.

*Perezia arizonica.*—At the junction of the branches with the roots, and covering the greater part of the former, is a soft silky substance which is used by the Apache Indians in gun-shot and other wounds, to stop hemorrhages, for which it is well adapted.

*Glycyrrhirza lepidota*, called by settlers of Utah, Desert root.—Pah-Utes eat it for its tonic effects. In taste it is much like licorice. Whites sometimes chew this root in place of tobacco.

*Ephedra antisyphilitica*, called *teamster's tea*, since men traveling with teams in New Mexico, Arizona and Southern California, camping among Indians, contract venereal diseases, and use this plant abundantly as a remedy, taken internally in the form of tea. A quantity of the plant is often taken along in case of need. This is a well-known remedy for gonorrhœa among many Indians and Mexicans. It is a strong astringent, and may prove valuable for its tonic properties.

Dyeing Materials.—*Rumex hymenosepalus*, a species of dock, is very abundant in sandy localities of mountain districts, and along river buttoms in Arizona and Southern Utah. Indians use the root for tanning buckskins. Moccasins made from leather thus tanned are rendered much more durable, and less liable to injury from moisture. It it also used in dyeing, as it yields a bright brown or mahogany color. Occasionally, Indians ornament their bodies by using this substance to form designs upon their limbs Males, especially, go more or less naked all the year round. The people of Utah use the leaf stem, as a substitute for rhubarb, to make pies.

*Sueda californica.*—At San Diego, California, it is commonly called glass wort, from the glassy brittleness of the stem. It yields much caustic potash, the ashes of which are used by soap makers. Indians gather the seed for food. The plant also yields a dark coloring matter.

*S. diffusa*, *Sah-ap-weep* of the Pah-Utes —The seeds of this plant are very small, nevertheless they are gathered in great quantities. They are very difficult to clean,

but the Indians are glad to obtain them. They are ground fine and made into biscuits. The seeds have a decidedly salty, potash taste. The flour tastes best when made into mush. The Coahuila Indians of Southern California make a fine black dye by steeping a quantity of this plant in water. For coloring their baskets black, they take some mature rushes and steep them several hours in this black dye, which is very penetrating, and the color is durable, but it has a very fetid, disagreeable smell.

*Dalea Emoryi, D. polyadenia.*—Branches of this plant steeped in water form a bright yellowish-brown dye, and emit a strong rue-like odor. The Coahuila Indians of California, to ornament their baskets of a yellowish-brown color, steep their rushes in a dye of that color prepared from these *Daleas.*

*Larrea mexicana, Tah-sun-up* of the Pah-Utes.—It is one of the commonest plants of Southern California, Lower California, Arizona and Southern Utah. A lotion made by steeping branches of this plant in water, and applied to sores of man or beasts, proves very efficacious, and a powder prepared from the dry leaves is good for chronic sores. From the old wood exudes an abundance of a gum, which is softened and used by the Indians to cement their flint arrow heads into their shafts. The Apache Indians use this gum as a styptic. The settlers of Utah often use this plant in dyeing, as it produces a greenish-yellow color, and garments thus dyed have the curious property of emitting a very disagreeable resinous odor ever afterwards on being heated. In consequence of the peculiar odor of the fresh plant, it is sometimes called creasote wood.

*Garrya flavescens.*—The fruit of this plant yields a violet coloring matter, which is used by Arizona Indians. The leaves are used for ague and for colds, made into a tea and taken internally.

*Trichostemma lanatum.*—By Mexicans and the Indians of Southern California it is called *Romero.* It is used by them to impart a dark or black color to the hair, and to promote its growth. A strong decoction is made of the leaves which is frequently applied to the hair. It is a very beautiful plant, with bright blue flowers which emit a strong odor of hops.

*Orthocarpus luteus.*—This plant yields a delicate pink color, which is used by the Nevada Indians.

*Eritrichium micranthum.*—The slender roots of this plant yield a delicate yellow paint, used by Indians of Utah.

*Lithospermum longiflorum*—The root yields a purple color; it is the Puccoon of the Eastern Indians.

*Polyporus officinalis,* a fungus which yields a reddish coloring matter which at one time was much used by Indians to paint their faces. Now vermillion is so cheap that it has to a great extreme superseded this.

*Evernia vulpina,* a lichen which yields the highly prized yellow paint found so frequently among the Western Indians. The Apaches of Arizona carry a portion of it carefully in a small buckskin bag. It is considered a charm when applied to the face, and a cross of this color on their feet enables them to pass their enemies unseen.—*The American Naturalist,* Sept.

# CHINESE PHARMACY IN THE UNITED STATES.

By Rich. V. Mattison, Ph.G.

Sauntering along one evening with some friends in the City of the Golden Gate, discussing the pharmacy of the past and that of the immediate future, we thought a visit to the Celestials would be *apropos*, so we dropped into the shop of Mr. Fook Sing Tong to chat about the price of drugs and the probability of an early agreement on the subject of an International Pharmacopœia.

The representatives of the oldest nation not being so communicative to our body as we desired, we soon transferred ourselves to the shop of Messrs. Chun Wo Tong & Co., who have the best arranged pharmacy, probably, among the Orientals of the coast. Here we were cordially welcomed, and, after an interchange of courtesies, which consisted on their part of the usual tea-drinking ceremony, we proceeded to inspect the pharmacy.

The junior partner we found engaged in the preparation of a large quantity of pills. In this case *secundum artem* means that the powders are beaten up into a mass, a mortar being used and the pestle manipulated in true Occidental style. When the mass is of sufficient tenacity, it is held in one hand and with the other pulled and rolled into a pipe of about the thickness of a stick of liquorice, and then, with one hand still grasping the pipe, sufficient is pinched from the end by means of the finger nails, which are kept long for the purpose, to make a pill; this is rolled between the thumb and fore finger until quite spherical, when it is dropped into a pan, where after a sufficient number have accumulated, they are placed in a warm place to dry. The whole process is one of astonishing accuracy and dexterity. The mortars used are of brass, the usual shape and size; the pestles are of wood, with a brass "nose" at the apex firmly joined to the wood. Each mortar is furnished with a leather cover, which in its centre is pierced with a hole for the passage of the pestle.

All drugs are prepared for use or sale in the following manner: The drug is carefully steamed, and then, while soft, is cut, usually transversely, in very thin slices, by means of a machine resembling a straw cutter or tobacco knife. Perhaps liquorice root is a good example of the preparation of similar drugs. It is first steamed, then decorticated, and then sliced and placed in the sun until perfectly dry. No artificial heat is used. It is then ready for sale. Its appearance by this time is about as unlike liquorice root as it is possible to get it. Orange and lemon rinds are treated in the same manner, and come into the market in the favorite chipped beef style.

The Oriental has no liquid preparations to trouble him, but his profession is thoroughly in the line of practical pharmacy. Think of it, pharmacists of a civilized community! Not an elixir to grace his shelves. Not even a pill except of his own manufacture. Not a sugar-coated, gelatin-coated, or even a compressed pill to be seen upon his shelves, to say nothing of his not being obliged to keep half a dozen makes of each of the above lines. Already we think we hear some one murmuring, "What a paradise for pharmacy!"

The ℞ is written by the physician upon rice paper, and, after being compounded, is twisted up into a little roll and returned with the medicine to the owner, *i. e.*,

the patient; hence, no repetition can be made without the return of the original prescription, which is, no doubt, pleasant to the physician. The scales used are on the principle of the old fashioned steelyard. The pan is usually about four inches in diameter, and the weighing is performed with great rapidity. Nearly all the ingredients of the prescriptions are chipped drugs or herbs, though occasionally some chemicals may be used, iron rust for instance. These are all bruised in the mortar together, and then a tea is made, either by the druggist or the patient, generally the latter.

The great tonic is ginseng. This is very highly prized, and besides being worn as an amulet is of daily use among them. Its chief office seems to be that it "makes strong," which is about all they can or will "savey" on the subject.

Opium is largely sold, but always, we believe, in the state of aqueous extract. This is, of course, almost entirely used for smoking purposes, and is prepared exclusively, we believe, in China and imported in the state of an extract of about the consistence of honey. It comes of two grades, the finest called "first chop," and is retailed for its weight of silver, the "two bit" or "four bit" (fifty cents) pieces being placed in a basket upon one end of the steelyard and being balanced upon the pan by the requisite weight of the extract placed in a horn cup. The second grade is sold at various prices. The smoker knows whether he is being cheated or not by the color it gives on the earthen bowl of the opium pipe. If it burns to a light, rich brown color and gives the peculiar odor so grateful to the olfactory nerves of the Mongolian, it is satisfactory. Good smokers will smoke of an evening the weight of a trade dollar, perhaps more, of the "first chop" extract, but of this we may speak in a future paper.

In closing this paper, a circumstance occurring Sixth mo. 9th, 1878, is brought forcibly to mind. Mr. Wong Ah Get, dying at the hospital of the Ning Yung Cal stated that he died of taking Mar Tin, which, upon investigation was found to be the bean of Strychnos Nux Vomica; the Chinese obtain the poison from the floss of the bean, as they use the meat in the preparation of a cathartic. The eminent Chinese physician, Dr. Li Po Tai, said, in his opinion strychnia was a mineral poison obtained from the ground, and that there was no antidote for it. This seems to be illustrative of the amount of pharmaceutical and medical knowledge on the subject.

*Philadelphia.*

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## AMERICAN PHARMACEUTICAL ASSOCIATION.

**First Session.**—The twenty-sixth annual meeting assembled in Concordia Hall, in the city of Atlanta, on Tuesday, November 26, at 3 o'clock P.M. President Saunders occupied the chair, J. M. Maisch acted as secretary. Hon. Mr. Angier, Mayor of Atlanta, was present and delivered an address of welcome, to which Mr. Saunders replied, on behalf of the Association. Messrs. G. J. Luhn, of South Carolina, F. T. Whiting, of Massachusetts, and G. S. Russell, of New Hampshire, were appointed a Committee to Examine Credentials, and subsequently reported that such had been received from the Colleges of Pharmacy of Ontario, Massachusetts,

New York, Philadelphia, Washington (National), Cincinnati, Chicago, St. Louis and Louisville; from the Alumni Associations of Massachusetts, Philadelphia and St. Louis; from the State Pharmaceutical Associations of Connecticut, New Hampshire, Pennsylvania, South Carolina, Georgia and Kentucky; from the Pharmaceutical Associations of Kings county, N. Y., Newark, N. J., Richmond, Va., Augusta, Ga., and from the Literary and Scientific Society of the German apothecaries of New York.

The president's annual address was listened to with marked attention. In it he traced the progress of pharmacy from ancient times down to the present day, compared the manner of conducting business during the last century with that of the present age, and dwelled at some length on the additions to materia medica from the western hemisphere.

Invitations were received from Prof. Geo. Little to visit the rooms of the Geological Survey of Georgia; from the faculty of the Atlanta Medical College to visit that institution; from the Atlanta City Brewing Co. to visit their establishment, and from the druggists of Atlanta to a complimentary dinner, on Wednesday. Invitations were extended to the Governor, members of the Legislature and judges of the Supreme Court of Georgia, to the mayor and to the medical profession of Atlanta, to attend the sessions.

In the absence of the members of the Committee on Papers and Queries, Mr. W. A. Taylor, of Atlanta, was requested to act in their stead, until the election of another committee.

When the roll was called 48 members answered to their names, and subsequently 49 members were elected. The various committees handed in their reports, with the exception of that on metric weights and measures, which was not received.

On appointing the Nominating Committee, it was found that no representatives were present from the following bodies, from whom credentials had been received: The National (Washington), Cincinnati and Chicago Colleges of Pharmacy, the Alumni Association of the Massachusetts College, and the Newark and Richmond Pharmaceutical Associations. The other delegations appointed each one of their number, and the following were added from the association at large: Messrs. P. C. Candidus, of Alabama; A. A. Menard, of Georgia; G. W. Sloan, of Indiana; J. U. Lloyd, of Ohio, and H. E. Griffith, of New York.

The report of the Executive Committee, which was read by the chairman, gave an account of the work performed during the year, related the action taken with regard to the postponement of the meeting, and closed with obituary notices of members deceased during the year. After the reading of the Secretary's report, the Association then adjourned to 9 30 o'clock on Wednesday morning.

**Second Session.**—At this session the nominating committee presented their report, and the following officers were duly elected to serve for the ensuing year: President, Gust. J. Luhn, of Charleston, S. C.; Vice Presidents, Fred. T. Whiting, of Great Barrington, Mass., Henry J. Rose, of Toronto, Canada, and Wm. H. Crawford, of St. Louis, Mo; Treasurer, Chas. A. Tufts, of Dover, N. H; Secretary, John M. Maisch, of Philadelphia, Pa.; Reporter on Progress of Pharmacy,

C. Lewis Diehl, of Louisville, Ky. The standing committees (Executive, on Drug Market, on Papers and Queries, on Business, on Prize Essays and on Legislation) were likewise elected. The President and Vice Presidents present were introduced to the meeting, and on taking the chair Mr. Luhn expressed his thanks for the honor conferred upon him, and promised to use his best endeavors to advance the cause and increase the membership of the Association.

The Treasurer read his annual report, accounting for receipts during the past year amounting to $5,313 49, the disbursements being $4,451.18, leaving a balance of $862.31 in his hands. The report was referred to an auditing committee, consisting of Messrs. J. L. Lemberger, of Pa., B. F. Morse, of S. C., and G. W. Sloan, of Ind.

The following annual reports were read and referred: Of the Committees on Drug Market, on Prize Essays, on Legislation and the report on the Progress of Pharmacy. Mr. Kennedy reported on the Centennial fund that the committee had collected only $163, but that the Secretary of the local committee had informed him that the time in which to make up the whole amount of $525 would be extended for another year.

The Association then proceeded to examine the specimens on exhibition, and adjourned afterward until 2.30 o'clock.

**Third Session.**—After the reading and approval of the minutes, Mr. Kennedy read the report of the Executive Committee in relation to the proposed discontinuance of the exhibitions in connection with the annual meetings. The report was in favor of continuing the exhibitions, but proposed some regulations with the view of excluding objectionable articles, and to embody these regulations in the By-Laws. The report was accepted and the consideration postponed to the next session, when they were adopted. These regulations invite manufacturers and others to exhibit crude drugs, chemicals, pharmaceutical preparations, chemical and pharmaceutical apparatus and utensils, and objects of general scientific and special pharmaceutical interest. The following articles will not be admitted: Proprietary and patented medicines, medicinal or pharmaceutical preparations the names of which have been copyrighted or the complete working formula of which is withheld, and such chemical preparations or mixtures which are offered under other than scientifically recognized names. The report on the exhibition shall include such comments as in the judgment of she committee may be deemed proper.

The report of Mr. Chas. Rice, chairman of the Committee on the Revision of the Pharmacopœia, was read and referred, and resolutions of thanks were passed to the Hon. Wm. M. Evarts, Secretary of State of the United States, to the diplomatic officers of the United States, and to all those gentlemen who have extended aid to the committee. The resignation of Mr. Rice as chairman of the committee, tendered on account of impaired health, was accepted with regret.

Mr. Kennedy read a paper on pharmaceutical preparations of coca, suggesting a *fluid extract of coca* to be prepared from the powdered leaves by exhausting them with a mixture of three measures of strong alcohol and one measure of water; also an *elixir of coca* made by percolating 4 troyounces of powdered coca leaves with 70

per cent. alcohol until 12 fluidounces of tincture are obtained, dissolving in this 6 drops of oil of orange and 2 drops of oil of cinnamon, and adding 4 fluidounces of syrup.

A very comprehensive paper on *Erythroxylon coca*, by James G. Steele, was also read. Mr. Steele reduces the leaves to powder by grinding them with one-third their weight of sugar; the powder is exhausted with a mixture of equal measures of strong alcohol and water, the fluid extract being obtained by expressing strongly at least twice, no heat being employed. If bicarbonate of potassium had been added during the process, the taste of the fluid extract was less agreeable and the effects were less convincing than with the hydro-alcoholic fluid extract.

Mr. H. J. Rose, however, stated that he had obtained very favorable results with a fluid extract of coca in the preparation of which a small quantity of syrup of lime had been used.

Query 5, on the *affinity of glycerin for water* was continued to Mr. Kennedy at his request; his experiments are not yet concluded, but thus far have proved that glycerin, when exposed to a damp atmosphere, absorbs much larger quantities of water than is generally supposed.

Query 7 was answered verbally by Dr. Menninger. The *damiana* originally introduced is a species of Turnera; another variety is a species of Haplopappus. Neither the one nor the other possesses the aphrodisiac properties for which the drug has been lauded.

Mr. S. A. D. Sheppard's paper on *compound resin cerate* suggested the substitution of the linseed oil by an equal quantity of paraffin oil, for preventing the preparation from becoming tough. Expressed oil of almonds will likewise obviate the difficulty, but it is less desirable than paraffin oil.

Prof. Sharples, in answer to query 10, reported a considerable number of poisonous or injurious substances used for *coloring candies*, among which may be mentioned gamboge, chromate and other compounds of lead, compounds of copper, arsenic, antimony, cadmium, etc.

A very interesting paper on the *berries of Benzoin odoriferum*, by Dr. A. W. Miller, was read and samples of the products exhibited. By warm expression and by subsequent treatment of the press cake with gasolin, the author obtained 50 per cent. of fixed oil, having the consistence of castor oil, and a greenish brown color. The berries were found to contain about 1 per cent. of a thin bright green volatile oil, having the specific gravity ·850, and resembling in taste that of allspice and prickly ash; it appears to possess carminative properties.

Query 17 was answered in a paper by E. L. Boerner, who recommends, in preparing *fluid extract of colchicum seed* to deprive the powdered seeds of fixed oils by treatment with gasolin, which is preferable for this purpose to ether, the latter solvent dissolving also notable quantities of colchicia. The advantages of this treatment are, that the preparation is free from fixed oils; hence is more elegant in appearance, mixes with aqueous liquids without causing turbidity, and may perhaps be useful for hypodermic medication, if the glycerin be omitted.

Mr. Shinn reported verbally on *fluid extract of wild cherry* and exhibited various samples. The treatment of the powdered bark with a mixture of glycerin and

water is considered to yield a better preparation than the process of the pharmacopœia.

On motion of Dr. Menninger a committee, consisting of Messrs. Lemberger, of Pa., Ingalls, of Ga., and Drake, of Mo., was appointed to draft resolutions expressive of the sense of the meeting relative to the recent death of Mr. Thos. H. Powers.

A letter from Messrs. Wallace Bros. was read, inviting the members to visit Statesville, N. C., and the invitation was accepted. The Association then adjourned until Thursday morning at 9.30.

**Fourth Session.**—After the reading of the minutes, an invitation from Mr. Wm. J. Land, State Chemist, to visit his laboratory, was received and accepted. Invitations were also received from Portland (Me.), Indianapolis (Ind.) and Cincinnati (O.), to hold the next annual meeting in the cities named. On motion, a committee consisting of Messrs. Eastman of New Hampshire, Tarrant of Georgia and Tomfohrde of Missouri was appointed to consider and report on the time and place of the next annual meeting.

Dr. Murray introduced several resolutions, urging some measures with the view of simplifying the popular introduction of the metric system of weights and measures, namely, to memorialize Congress praying to authorize the Chief of the Signal Service to add to the meteorological table a column giving the temperature in the centigrade scale; and to authorize the Director of the Mints to stamp the different gold, silver, nickel and copper coins with their respective weights in grams and centigrams The resolutions were referred to the Executive Committee, to report thereon at their convenience.

The report of the Committee on Ways and Means was read, accepted and laid upon the table for future action.

A paper by Prof. Remington in answer to Query 18, on *fluid extract of liquorice root*, was read and referred for publication. The formula proposes to exhaust 16 troyounces of powdered liquorice root with a mixture of 4 fluidounces of alcohol, 3 of glycerin, 8 of water and 1 of stronger water of ammonia; the percolation is continued with alcohol diluted with 3 times its bulk of water until 24 fluidounces are obtained, the first 12 of which are reserved and the remainder evaporated to 4 fluidounces and then mixed with the reserved portion. Prepared in this way, six cubic centimeters of the fluid extract, when treated with a slight excess of diluted sulphuric acid, yielded a precipitate of glycyrrhizin, which after washing and drying weighed 0·967 gram, or a larger quantity than from five other fluid extracts, made by different processes. *Syrupus glycyrrhizæ* may be made by mixing 2 fluidounces of this fluid extract with 14 fluidounces of simple syrup. *Elixir glycyrrhizæ aromaticus* may be obtained by mixing 2 fluidounces of the fluid extract, 4 of alcohol, 6 of syrup, 10 minims of oil of cloves, 5 minims of oil of cinnamon, 12 minims of oil of nutmeg and sufficient water to make one pint.

Mr. Lloyd read a very interesting paper on the *preparation of salts of berberina* in

answer to Query 26, and illustrated the subject by numerous samples of the products in various stages of manufacture. The paper is not adapted for condensation; but we hope to be enabled to publish it in full.

The report of the Committee on the Next Annual Meeting was read by Mr. Eastman; it proposed to meet next year in Indianapolis, on the second Tuesday in June. After some discussion the report was adopted with the amendment that the meeting be held on the second Tuesday of September.

Mr. Lloyd exhibited a number of samples of *resin of podophyllum*, and read a paper on the same subject in answer to Query 27. It conveys the information that a very light-colored resin may be obtained by precipitating the tincture with pure cold water and drying the precipitate in the cold. A solution of alum added to the water imparts a greenish-yellow color to the resin; the use of heat during precipitation and drying darkens the color, and with common water different shades of color are obtained, according to the saline matter dissolved in the water.

A paper by J. L. Lemberger, in answer to query 29, on a *liquid preparation of lactucarium*, and illustrated by various specimens, was read. It proposes a *fluid extract of lactucarium*, to be made by beating 16 troyounces of lactucarium, depriving it of caoutchouc and lactucerin, by treatment with 32 fluidounces of petroleum benzin, after drying, powdering it with an equal bulk of sand, and exhausting it in a percolator with diluted alcohol. The first four fluidounces are reserved; the remainder is distilled and evaporated to 10 fluidounces, filtered, and the filter washed with sufficient diluted alcohol to make the whole fluid extract weigh 16 troyounces. By mixing one troyounce of this fluid extract with sufficient diluted alcohol to make 8 fluidounces, *tincture of lactucarium* is obtained, and on mixing the same quantity with sufficient simple syrup for 16 fluidounces, a nearly transparent *syrup of lactucarium* may be made, having all the bitter taste of the officinal syrup.

Mr. Lloyd read a paper in answer to query 43, on *tinctures prepared with fresh plants*. The author's experience is in favor of tincturing plants containing essential oils while fresh. Other plants may be partially dried, but complete drying previous to exhausting them appears to dissociate some of the active principles. A tincture prepared from undried veratrum viride was found to be an inferior preparation, but when the root was recently dried, the tincture prepared from it had the proper effects.

A paper by Prof. Sharples, in answer to query 48, on *distinguishing the cinchona alkaloids*, elicited some discussion, it being maintained that from the recently precipitated alkaloids, even in the presence of a large excess of cinchonia, all the quinia and quinidia may be readily extracted by ether, together with cinchonidia and some cinchonia, and that the undissolved portion does not show the thalleioquin reaction with chlorine water and ammonia.

An adjournment was had until 2.30 P.M.

**Fifth Session.**—An invitation from the Committee on Arrangements to attend a concert and social entertainment on the same evening was received and accepted.

A paper by Mr. J. R. Mercein, on *chemicals manufactured by apothecaries*, was read in answer to query 52. The author advocates the more general preparation of many chemicals by the pharmacist, and enumerates a number, which may readily be made with very simple apparatus, such as are found in every pharmaceutical store.

Dr. Murray read a paper on *uniformity in chemical terminology*, urging the general adoption of certain terminations in designating elements and compounds of different classes.

Mr. Saunders exhibited many samples of *sachet powders*, and read a paper on this subject, in which he recommended their preparation by the following formulas;

*Heliotrope.*

| | |
|---|---|
| Rose leaves, | two ounces. |
| Orris root, | one ounce. |
| Lavender flowers, | one ounce. |
| Tonqua leaves, | two drachms. |
| Benzoin, | one drachm. |
| Musk, | five grains. |
| Oil of bitter almonds, | three drops. |
| Oil of santal, | thirty drops. |
| Oil of neroli, | ten drops. |

*Clovepink.*

| | |
|---|---|
| Orris root, | two ounces. |
| Lavender flowers, | one ounce. |
| Patchouly leaves, | half ounce. |
| Cloves, | two drachms. |
| Deertongue, | two drachms. |
| Pimento, | one drachm. |
| Musk, | two grains. |
| Oil of rose, | ten drops. |
| Oil of neroli, | twelve drops. |
| Oil of santal, | twenty drops. |
| Oil of lavender (Engl.), | ten drops. |

*Mille Fleurs.*

| | |
|---|---|
| Lavender flowers, | six drachms. |
| Cloves, | two drachms. |
| Cassia buds, | two drachms. |
| Coriander, | half ounce. |
| Benzoin, | half a drachm. |
| Nutmeg, | half a drachm. |
| Vanilla, | one drachm. |
| Orris root, | two ounces. |
| Musk, | five grains. |
| Oil of rose, | five drops. |
| Oil of neroly, | four drops. |
| Oil of patchouly, | two drops. |
| Oil of lavender (Engl.), | four drops. |
| Oil of verbena, | two drops. |
| Oil of santal, | ten drops. |

*Jockey Club.*

| | |
|---|---|
| Lavender flowers, | half ounce. |
| Rose leaves, | one and a half oz. |
| Orris root, | two ounces. |
| Vanilla bean, | half a drachm. |
| Musk, | four grains. |
| Extract of jasmin, | two drachms. |
| Oil of santal, | twenty drops. |
| Oil of neroli, | five drops. |
| Oil of rose, | ten drops. |

*Frangipanni*

| | |
|---|---|
| Orris root, | two ounces. |
| Rose leaves, | two ounces. |
| Vanilla bean, | one drachm. |
| Benzoin, | one drachm. |
| Oil of lavender (Engl.), | fifteen drops. |
| Oil of bergamot, | sixteen drops. |
| Oil of cassia, | six drops. |
| Oil of pimento, | ten drops. |
| Oil of santal, | thirty drops. |
| Oil of neroli, | sixteen drops. |
| Oil of rose, | eight drops. |

*Wild Flowers.*

| | |
|---|---|
| Asarum canadense, | one ounce. |
| Deer tongue, | half ounce. |
| Lavender flowers, | half ounce. |
| Sweet flag root, | one drachm. |
| Coriander, | six drachms. |
| Patchouly leaves, | one ounce. |
| Nutmeg, | one drachm. |
| Oil of bergamot, | forty drops. |
| Oil of neroli, | ten drops. |
| Oil of santal, | twenty drops. |
| Oil of verbena, | five drops. |
| Oil of patchouli, | five drops. |
| Extract of jasmin, | two drachms. |

Mr. Maisch exhibited a sample of *the volatile oil of asarum canadense*, and stated that Messrs. A. H. Van Gorder and Emil Boerner considered it to be an ingredient

of "Hoyt's German Cologne," and that the last-named gentleman had used it not only in perfumery, but likewise in medicine, in the form of medicated water and of syrup, the latter prepared by dissolving sugar in the asarum water.

Mr. J. U. Lloyd read a paper entitled *miscellaneous notes.* In 1875 he had reported on *dilute hydrocyanic acid*, prepared with alcohol in August, 1872; of 112 one ounce vials of this acid, the contents of two have become black, and in both the acid has been in contact with organic matter, the stoppers having been waxed. Another lot made in July, 1874, has been kept in a one-gallon bottle, which was opened from time to time, acid being withdrawn until only a few ounces remain, which are colorless, and contain 1·43 per cent. HCy, the strength having decreased about one-fourth.

A sample of *Tincture of geranium maculatum* was made in March with alcohol of spec. grav. ·835, and was found gelatinized in June, having at the same time acquired a faint odor of wintergreen. A sample of *fluid extract of stillingia*, which had been converted into a jelly-like mass, was likewise shown. The causes of these changes are not known.

Mr. Lloyd also exhibited a specimen of the *bark of mangifera indica*, which has been recommended and used to some extent in this country in diarrhœa and diseases of the mucous surfaces.

Attention was also called by Mr. Lloyd to some California plants which had been introduced under fictitious names, one having been called *yerba reuma* was found to be *Frankenia grandifolia*, nat. ord. Frankeniaceæ, a common plant of California, having a very salty taste. The article introduced under the name of *cascara sagrado* was ascertained to be the bark of *Rhamnus Purshiana*. The *mountain or Oregon grape* of the Pacific coast is usually referred to as *Berberis aquifolium*, but Mr. Lloyd has found *B. repens*, *B. nervosa* and *B. pinnata* substituted for it.[1]

In commenting on Mr. Lloyd's paper, Messrs. Maisch and Saunders referred to censurable practices which had become rather frequent of late years and should be discountenanced—such as the introduction under fictitious names of drugs and chemical preparations and the copyrighting of names for preparations intended for medicinal use.

The Auditing Committee reported having found the accounts of the Treasurer correct, and proposed that this officer should be required to preserve his vouchers for the space of three years, after which time they may be destroyed. The motion was carried.

Mr. Lemberger read a paper by J. F. Hancock on *the arrangement of store room and cellar* in answer to query 56.

Mr. Saunders read a paper by Dr. E. R. Squibb, entitled *fluid extracts by repercolation*, which gives in tabular form the results of a large number of observations on all the fluid extracts in common use, and completes the paper of the same author published on page 209 of the "Amer. Jour. Phar.," 1878. On motion the Association voted that both papers be published in the Proceedings. Prof. Diehl's paper on the same subject was likewise referred for publication.

[1] Most of the samples received by us were *B. nervosa*. All these species appear to contain berberina, and probably possess alike properties.—EDITOR.

Mr. Eli Lilly, of Indianapolis, was nominated and duly elected local secretary.

The Committee on the President's address and Secretary's report reported a series of resolutions which were adopted, expressing the thanks of the Association to the publishers of "New Remedies" and of the "American Journal of Pharmacy" for their courtesy in loaning wood cuts for the volume of Proceedings, and to Mr. G. J. Carney, of Lowell, Mass., for defraying one-half of the expenses of the portrait of his brother. The delegates present, as well as those who may be accredited to future meetings, were requested to hand to the secretary the names and address of the president and secretary of the Association represented by them for publication in the Proceedings.

On motion of Mr. Saunders it was resolved that when the Association again meets in the Southern States the meeting should take place during the spring months.

The Business Committee presented several valuable papers by Prof. A. B. Prescott, which had been prepared for the use of the Pharmacopœia Committee, and are entitled *Morphiometric process for opium*, *Valuation of tincture of opium*, *Separation and quantitative estimation of the cinchona alkaloids*, and *Purification of strychnia from brucia*. The papers were referred for publication.

The propositions of the Committee on Ways and Means were called up for consideration as amendments to the by-laws, but after some discussion the members were evidently not prepared to vote thereon, and the proposed amendments were ordered to be printed and made the special order of business for the the third session of the 27th annual meeting. The committee favors the accumulation of a permanent fund from fees which may be received from life memberships, and proposes a graded fee for those who may have paid their annual contributions for five years or more. The committee further proposes that at each annual meeting, if necessary, a per-capita tax shall be levied and collected to cover estimated deficiencies, as may be determined by the Auditing Committee. Life members shall be furnished with the Proceedings upon application to the Secretary.

The Association then adjourned until Friday morning at 9 o'clock.

**Sixth Session.**—A large number of fluid extracts were exhibited illustrative of the results detailed in Prof. Diehl's paper. A paper on percolation, written by Mr. E. A. Joy, was referred to the Pharmacopœia Committee. In view of the inability of several members of this committee to participate actively in the work of revising the Pharmacopœia, on motion of the Business Committee, Messrs. E. H. Sargent, J. U. Lloyd and L. Dohme were appointed in place of Messrs. Ebert, Wayne and Hancock; and Mr. Dohme was appointed chairman in place of Mr. Rice, resigned. Mr. Lloyd desired to decline, but was prevailed upon to accept the appointment.

Mr. Lemberger, on behalf of the committee appointed for the purpose, submitted the following resolutions, which were adopted:

WHEREAS, This Association has been apprised of the decease of Mr. Thomas H. Powers, late of the city of Philadelphia, Pa., who, although not a member of this body, has become endeared to us, and his memory deserves a suitable tribute at our hands, and whilst we bow with submission to the Divine decree, we nevertheless feel a painful sadness in the thought that one whose lifelong devotion to the

study and development of the science of chemistry and pharmacy in our country has been removed, whose character was unalloyed with blemish, whose fame as a man of strictest integrity and honorable purpose, whether received from a commercial or social standpoint, has spread far and wide, whose kindness of heart knew no bounds so long as he was cognizant of its demand, and whose every act was prompted by a conscientious duty, we feel that in his death we are bereft of his useful influence and much-valued encouragement in all that appertains to the highest interests of our Association. Therefore

*Resolved*, That this Association has an unfeigned, though a melancholy, satisfaction in testifying its mark of appreciation of his service as a sincere humanitarian, a friend of education and an unexceptional example for us all—a shining mark among the illustrious and useful men of this age, whose exemplary life is worthy of highest admiration, and in whose footsteps we may with safety be emulated to follow.

*Resolved*, That, as an association representing large commercial enterprises and interests, we find embodied in the life of the deceased those elements of virtue and purity of character to which we are proud to point as typical of all that constitutes the highest order of business integrity.

*Resolved*, That the sympathy of this Association is mingled with that of the numerous beneficiaries of the deceased, and by this tribute is hereby tendered to the surviving afflicted family and firm of which he was a much-revered member, trusting that the affliction thus visited upon them will be followed by the comfort that a recollection of a life so usefully spent is more honorable and enduring than any other monument or tribute that can possibly be raised to his memory.

*Resolved*, That a copy of this memorial expression be forwarded to the family and firm of the departed.

The following resolution was offered by Mr. Saunders and passed:

*Resolved*, That the heroism of our fellow-pharmacists in the plague-stricken districts in the valley of the Mississippi, who have nobly stood at their posts in the hour of danger, is worthy of commendation, and this Association desires to place on record at this time its admiration of their noble doings in thus aiding suffering humanity at the risk of their own lives.

The sum of ten dollars was appropriated to cover deficiencies in the expenses of the Pharmacopœia Committee for the past year; and $25 were appropriated to the same committee for the ensuing year.

Nine new members were duly elected.

Mr. Maisch exhibited a section of the stem of cork oak, a piece of the bark and a sample of tea, all grown in Georgia and handed in by Mr. Ingalls; also specimens of saffron adulterated with a white powder (gypsum?), and saffron cultivated in Lebanon county, Pa., handed in by Mr. Lemberger.

Resolutions were passed thanking the Committee of Arrangements, the druggists and citizens of Atlanta, for their kindness and attention; the "Constitution" (daily paper) and its reporter for publishing the proceedings, and the officers for services rendered.

The Committee on Exhibition made a report, and were granted time for finishing it.

At 11 o'clock the Association adjourned, to meet again at Indianapolis, Ind., on the second Tuesday of September, at 3 o'clock P.M.

# MINUTES OF THE COLLEGE.

PHILADELPHIA, November 22d, 1878.

A special meeting of the Philadelphia College of Pharmacy was held this day at the College Hall, to take such action as might be deemed appropriate concerning the death of our late respected fellow-member, THOMAS H. POWERS.

The meeting was called to order by the President, who, on taking the chair, made a few remarks appropriate to the sad occasion. He informed the meeting that he had known Mr. Powers intimately for fifty years, commencing at the time when he was just entering his business career. During all this time their relations had been of the most cordial character, and his testimony of his deceased friend was that his course through life should be held up as an example to be followed by all. His whole life had been characterized in a pre-eminent degree by integrity, practical philanthropy and devotion to Christian principle.

The meeting was largely attended, some of the older members, who had been his cotemporaries in early life, being present to take part in the proceedings.

On motion of Thomas S. Wiegand a committee, consisting of Sam'l F. Troth, Charles Bullock and Joseph P. Remington, was appointed to draft resolutions expressive of the sense of the meeting, and report the same before the close.

A letter from Frederick Brown was read, expressing his regret at the loss sustained, and of his inability to be present and take part in the proceedings.

Addresses were made by Samuel F. Troth, John C. Allen, Jos. C. Turnpenny, Ambrose Smith, Charles Bullock, Daniel S. Jones, Thomas S. Wiegand, Joseph P. Remington, Andrew Blair, E. M. Boring and others. The older members narrated their early experience with the deceased, and bore uniform testimony to the excellence of character developed in his youth, and which continued to strengthen and increase during his whole life.

The testimony of all who spoke was that his whole life had been devoted to doing good to others; that his charities were not confined to those persons whom he alone knew, but were unobtrusively distributed wherever worthy want was made known to him; that he carried his religious duties so far as to make them a part of his business life, so that right and justice should be meted out to all with whom he came in contact; that he was faithful, benevolent, kind and considerate to all those who were in his employ, and that these principles were fully carried out to the end of his life; that religious and charitable associations with which he was connected will deplore his death, and that this College, for the friendship manifested towards it by him, will ever hold his memory in grateful remembrance.

It was the universal sentiment expressed by everyone who spoke that all who knew him or came in contact with him in the various avocations of life, held him in the highest esteem.

Joseph P. Remington, on behalf of the committee, read the following preamble and resolutions, which were, on motion, unanimously adopted:

WHEREAS, The Philadelphia College of Pharmacy has learned with sincere sorrow of the death, on the 20th inst., of our honored fellow-member, THOMAS H. POWERS; and, as it is meet that we should express our sense of the loss we have sustained, therefore

*Resolved*, That in the decease of THOMAS H. POWERS this College has lost a member who, by his personal services and substantial liberality, has greatly aided in its growth and prosperity.

*Resolved*, That, as fellow-members of the College, we desire to express the high esteem in which we held the character of our deceased friend.

*Resolved*, That we desire to express our high appreciation of the noble example that he has left us of a large-hearted liberality, which knew no bounds when called upon for worthy objects, of his unflinching integrity, and of his skill in matters which related to business, and his devotion to the best interests of our profession.

*Resolved*, That the members of the College convene at the Hall, and proceed to the funeral in a body.

*Resolved*, That these resolutions be engrossed and sent to the family of the deceased, as an expression of our sympathy for them in their bereavement.

An unfinished memoir was read by Charles Bullock, Chairman of the Committee on Deceased Members, which was approved, and referred back to the committee for completion and publication in the "Journal of Pharmacy."

The business for which this meeting had been convened having been solemnly concluded, then, on motion, adjourned.

WILLIAM J. JENKS, *Secretary*

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# MINUTES OF THE PHARMACEUTICAL MEETING.

PHILADELPHIA, November 19th, 1878.

The meeting was called to order, and Mr. Alonzo Robbins was requested to act as chairman. The minutes of the last meeting were read and approved.

As announced in the notices, the collection of Japanese drugs was exhibited; these numbered in all some 225 specimens, were put up in four ounce wide-mouthed bottles, and labeled with Japanese inscriptions as well as with their scientific appellations.

A series of essential oils made by Pollak & Co., of Vienna, which were displayed at the late Centennial Exhibition and presented to the College, were also examined and called forth much commendation.

Prof. Sadtler exhibited a sample of oil of turpentine brought from San Francisco, said to be derived from the sugar pine, *Pinus ponderosa*. It is claimed by some to be superior to ordinary oil of turpentine in not being liable to resinify upon exposure, but the sample disproved this statement.

Mr. Boring called attention to a sample of oil that had been purified by treating it in a patented apparatus which it is claimed will restore even rancid oils to their original sweetness. The apparatus was described as a jacketed churn into which cold air was forced by steam power, the temperature being kept at about 100° F.; as it was recommended in connection with codliver oil, almost all the members who

participated in the discussion thought it was unwise to dispense such oil as had undergone any process by which its remedial powers could be in any wise impaired.

Prof. Maisch, on behalf or Mr. Garcia, a student of the present class from Cuba, presented a pod of Theobroma cacao, and also one of Cassia brasiliana. This last tree, a native of Brazil, has been introduced into the West Indies and grows there luxuriantly; the pod is thicker in diameter and longer and yields a greater quantity of pulp but not quite so sweet tasted as the Cassia fistula, for which it is sometimes substituted.

Prof. Maisch also exhibited a specimen of the Phrysenoma cornuta or horned toad, which had been sent from Texas by mail; it was a curiosity to most present and is singular in being able to exist for a long time without food; this individual had been without food for several days before starting on his travels and two or three days after his arrival here he escaped from his cage, a paper box, and has been wandering through the various rooms in the college for a week or two, still shows signs of vitality when so inclined.

Phenol phtalein has heen mentioned as a test for alkalies by Mr. Drew of Brooklyn, and its delicacy was shown to be such that a single drop of alkali when added to a dilute neutral solution gives a distinct red coloration.

Prof. Maisch presented a photograph of the inflorescence of Calla æthiopica, which exhibited partial transformation of the spathe into a leaf.

Samples of benzoinated and carbolized solution of alumina were sent by Mr. H. G. Debrunner, of Pittsburg, and a paper was read giving the process for preparing it (see page 572). On motion a vote of thanks was tendered to Mr. Debrunner.

As a matter of interest to the members present, Prof. Maisch stated the number of the present class to be about 166 in both junior and senior courses.

There being no further business, on motion the meeting adjourned.

THOMAS S. WIEGAND, *Registrar.*

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# PHARMACEUTICAL COLLEGES AND ASSOCIATIONS.

**New York College of Pharmacy.**—The conversational discourse on the evening of November 21st commenced with the reading of a paper by Mr. D. C. Robbins, on *Quinia in Commerce.* A history was given of quinia since 1820, with the market variations as affected by the principal intervening circumstances, as the attempt of the Peruvian government, prior to 1850, to monopolize the sale of bark, and the tariff variations since 1832, when this article made its first appearance in the Customs List of the country, it having been classed previous to this date as an unenumerated article under 5 per cent. revenue duty. A list of all the various duties on bark and quinia since 1832 was given, and the opinion was expressed that our present duties on all the products of cinchona bark, as 20 per cent. on sulphate and 45 per cent. on other salts of quinia, taking into consideration the demand for quinia, was objectionable.

A statement of the process and the requirements for the manufacture of quinia was given, to show that our inability to cope with Europe was due to the fact that our navigation laws, by discriminating duties, made the European market the best resort for the crude article. Besides, it was evident that other nations were in advance in the science of the cinchonas—quinology. The ruling quotations for quinia in Europe appeared to prove that this knowledge is farthest in advance in Germany, next in France and in England.

The lecturer believed that the determination of the value of the bark, which was a very difficult matter, was as well understood in the United States as in any country, and that there was little doubt that our machinery and devices to save labor and expense were in advance of other nations. A wise conservative tariff policy was advised, and that all duties upon these very important medicaments be reduced to 10 per cent. *ad valorem*.

The discussion upon *Quinia in Pharmacy* was a very important one, and participated in by Mr. Charles Rice and others. Tables were exhibited to show the solubility in ether of all the quinias of commerce, fifteen in number, as also of the extent to which many varieties of quinia could be combined with cinchonidia and make a clear solution, U. S. P.

A table of densities of the various quinias was also exhibited, by which it appeared that an organic change took place in the crystallization of the salt, as the bulk of some varieties, when finely powdered, was double that of others, and this last fact, which had never been noticed in our journals, had a very important bearing upon excipients and pill masses.

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**Alumni Association of the Philadelphia College of Pharmacy.**—The Second Social Meeting of this season was held at the College, November 7th, with an attendance of fifty-five. In the absence of the president, vice president Procter took the chair. After the reading of the minutes of the last meeting, Mr. Cook read an elaborate essay on the nat. order Compositæ. Mr. Sayre exhibited a few leaves of a California plant commonly called there wild peach, a popular remedy in that State for rheumatism. A student stated that it grew in Texas, and promised to procure a specimen of both the fruit and leaf for a future meeting.

Mr. Mattison recognized it as what is sold here as yerba santa. A very interesting paper was then read by Mr. Mattison on Chinese pharmacy in the United States.

Dr. Murray read a paper entitled "How to take notes," which contained some useful hints to students.

Mr. Kennedy spoke of the practice in some stores of adulterating cold cream, and mentioned one case that came to his knowledge where the druggist was in the habit of dispensing simple cerate, scented with oil of bergamot, as cold cream. He then read an essay on Ung. Aquæ Rosæ. He spoke also of the substitution of water for alcohol in tinct. ferri chlor. being practised in some country drug stores, and strongly condemned the custom.

Dr Murray spoke in the same strain, and predicted that so soon as pharmacists should adopt this plan tincture of iron would share the fate of dialyzed iron, as the

tincture depends for its virtues largely on the alcohol and chloric ether it contains. This led to a discussion on the subject of chloric ether, during which different views were expressed. Mr. Procter submitted ten specimens of officinal tinctures, and Mr. Jones six samples of crude drugs for examination and recognition by the students, in which they were fairly successful.

Mr. Jones submitted a sample of compound spirit of juniper, made by Mr. J. B. Moore by a formula devised and recommended by him. The formula is as follows:

| | |
|---|---|
| Oil of juniper, | ℥ivss |
| " caraway, | |
| " fennel, | *aa* ♏x |
| Alcohol, | |
| Boiling water, | *āā* Oi |
| Diluted alcohol, | q.s. ut ft Oii |
| Magnesium carbonate, | ℥x |

This gives a clear starbright preparation considerably stronger than the present officinal one. On motion adjourned.

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**Austrian Apothecaries' Association.**—The general meeting was held on Monday, October 14, 1878, at Vienna, Director Schiffner in the chair. Secretary Kwisda and Treasurer Seipel read their annual reports. A committee to inquire into the affairs of the Association was then appointed. Dr. Godeffroy spoke of the pharmaceutial preparations at the Paris World's Exhibition, exhibiting at the same time new pharmaceutical articles, presented to the Museum of the Association. The lecturer also demonstrated Edison's electric pen and phonograph.

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**Berlin Apothecaries' Association.**—A meeting was held on Wednesday, Oct. 23d, at 6 P. M. Reports of the different officers of the Association and of the committees were read and approved and official communications discussed.

Mr. Hoffmann delivered a lengthy address on the methods for testing chemical and pharmaceutical preparations of the Pharm. Germ.

After a lively discussion on the syrups of the latter, the meeting adjourned.

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**Hungarian Apothecaries' Society.**—The general meeting was held at Budapest, on Wednesday and Thursday, July 24th and 25th, the President, Jarmay, in the chair. The directorial report was read, treating principally of the execution of the resolutions adopted at the former meeting.

Mr. Rozsnyay delivered an address on Polariscopic examinations for distinguishing the cinchona alkaloids, by which he claims to be able to detect all adulterations qualitatively and quantitatively. Mr. Kiss exhibited medicated confections. Mr. Trajanovics delivered an address on animal malformations.

The next general meeting will be held at Budapest at the same time with the meeting of Hungarian physicians and naturalists.

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